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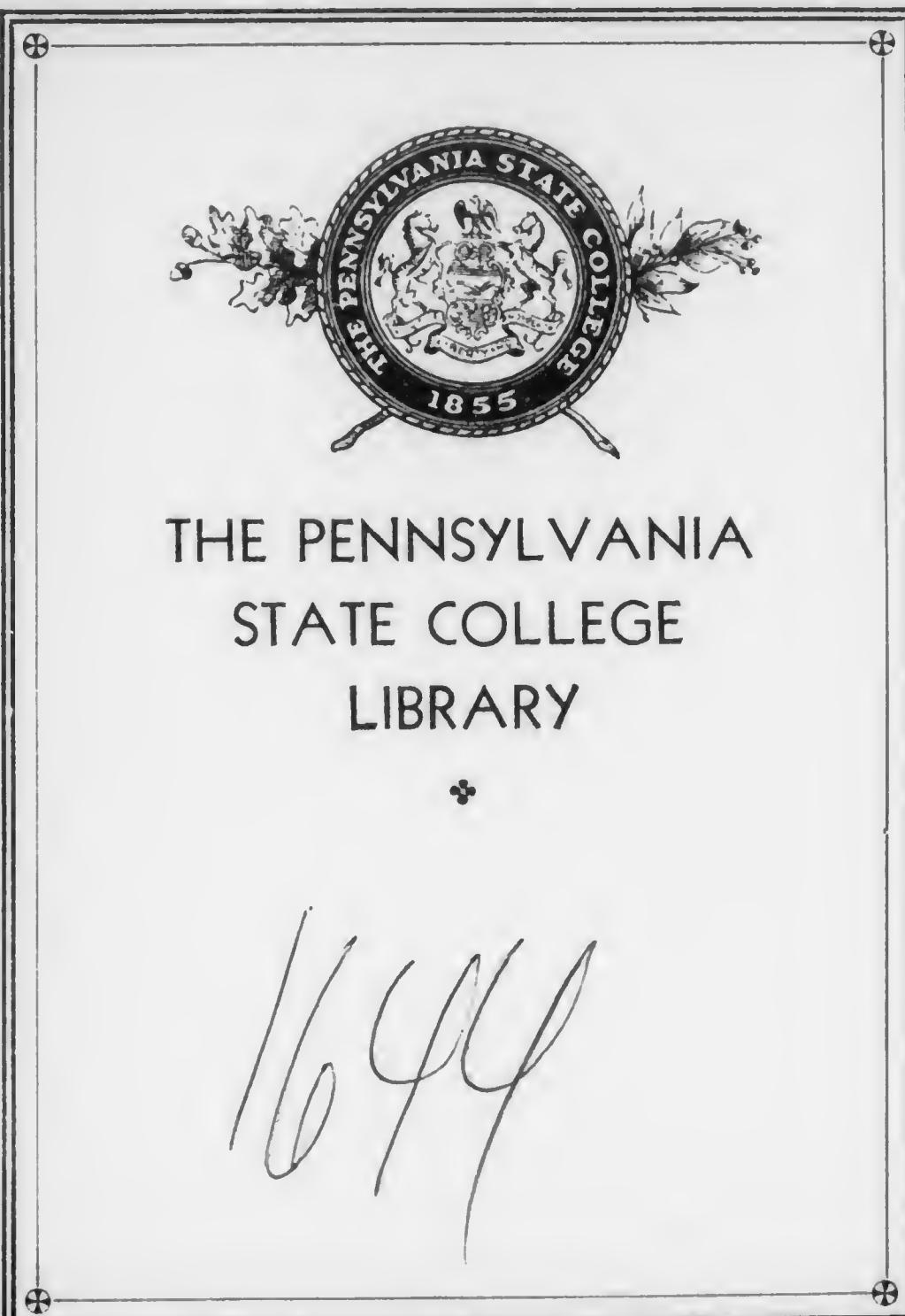
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF FORESTS AND WATERS
DIVISION OF HYDROGRAPHY
HARRISBURG

STREAM FLOW RECORDS

1936

Elevations of Major Floods

Prepared in Cooperation
with the
United States Geological Survey



FOR THE YEAR

October 1, 1935 to September 30, 1936

B 551.4
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1935/36

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STREAM FLOW RECORDS

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STREAM FLOW RECORDS
OF
PENNSYLVANIA
FOR THE YEAR
OCTOBER 1, 1935 TO SEPTEMBER 30, 1936

STREAM GAGING, FLOOD WARNING, AND
PRECIPITATION

This report contains records for the year ending September 30, 1936. All stream flow records previous to and including those for 1911, were published in one volume, Reports of the Water Supply Commission of Pennsylvania—1910 and 1911. For the years 1912 to 1921, they were published in the annual reports of the Water Supply Commission, with the records for 1917-18 and 1919-20 combined and issued in biennial form. Beginning with 1922, the records have been published by the Department of Forests and Waters, Division of Hydrography, in reports entitled "Stream Flow Records of Pennsylvania." They were published annually with the exception of those for the four years 1929-32, which were issued in one volume. Prior to 1913 they were compiled and published for calendar years. The 1914 records were tabulated for the nine months, January to September. Subsequent records have been published for the water years, October 1 to September 30.

Since June 1, 1931, the water resource investigations in Pennsylvania, including the collection of stream flow data, have been carried on under cooperative agreement with the Water Resources Branch of the United States Geological Survey.

STREAM GAGING

On October 1, 1935, the beginning of the 1936 water year, 98 stream gaging stations were in operation. Six stations were discontinued during the year, leaving 92 stations in operation at the end of this report period. The locations of the six discontinued stations and the dates when they went out of operation are as follows:

- Stony Creek at Johnstown, March 31, 1936.
- Chartiers Creek at Carnegie, September 30, 1936.
- Kiskiminetas River at Vandergrift, September 30, 1936.
- Upper Little Swatara Creek at Pine Grove, September 30, 1936.
- White Clay Creek near Newark, Del., September 30, 1936.
- Youghiogheny River at Sutersville, September 30, 1936.

Three of the discontinued stations were supplied with recorder equipment, thus leaving 53 stations in the State provided with wells, shelters, and water-stage recorders at the end of the 1936 water year.

This volume contains data for 105 stations, as shown by the tables and the map on pages 24-27. The records for the four stations on the Delaware River, two stations in the Potomac River Basin, and one station in the Monongahela River Basin were furnished by the New York, New Jersey, and Washington Offices of the United States Geological Survey. Descriptions of stations, tables of daily and monthly discharge, summary of run-off in second-feet per square mile, run-off depth in inches, precipitation, and per cent run-off to precipitation are given for 96 gaging stations having a satisfactory rating. Descriptions of stations and daily mean gage heights are published for four base stations operated in the Susquehanna River Basin for flood-warning purposes.

The Pine Grove station was discontinued on account of changing channel and backwater conditions. The results of the current-meter discharge measurements at this station are published in the table of miscellaneous discharge measurements on page 134.

The Newark station was discontinued as it had served the purpose for which it was established. The record was used in connection with the Delaware River Salinity Survey of the Pennsylvania Department of Health. This station record for the year ending September 30, 1936, is contained in this report.

The Sutersville station, which was not equipped with a waterstage recorder, was discontinued owing to the uncertain accuracy of the record due to regulation of the stream by water-power operations.

The station at Johnstown was discontinued on account of changes made in channel conditions by improvements and reconstruction that were made necessary by the 1936 flood. The record for this station is included in this report to March 31, 1936.

After several years efforts, it was found impossible to determine a rating for the Carnegie station that would justify the translation of gage heights into terms of discharge. The results of the currentmeter discharge measurements at this station are published in the table of miscellaneous discharge measurements on page 134.

The discharge for the Vandergrift station could not be accurately determined on account of the unknown quantities of water diverted past the gage. The station was discontinued in anticipation of establishing a new station at another site. There are no data for this station published in this report.

For stations where the maximum discharge has not been determined and published, a probable estimate can be furnished. Any other information that may be of importance to the engineer making application of these gaging-station records may also be obtained upon request to the Department of Forests and Waters, Division of Hydrography, Harrisburg, Pennsylvania.

The water year 1935-36 was characterized by a number of unusual climatic conditions that were strongly reflected in stream flow; however, as a whole, the extreme temperatures, precipitation, and stream flows adjusted themselves to approximately a normal year.

There were no unusual diversions from the ordinary climatic conditions in October and November. In general during the entire period from early in December until late in February, temperatures were exceptionally low and precipitation in the form of snow was unusually large. Ice on the streams attained more than normal thickness, except possibly on those reaches with swiftly running water or where chemical industrial wastes prevented its formation. There was also a heavy accumulation of snow and exceptional frost conditions where areas were not protected by snow cover.

During the two weeks February 25 to March 10 there was an average temperature of 36 degrees. The weekly averages at the individual first-order stations of the United States Weather Bureau in Pennsylvania ranged from 30 to 43 degrees. The melting of snow, the first since the middle of December, with very little additional precipitation except at a few scattered stations furnished enough run-off to break and move the ice on many streams; but as a rule there was not sufficient water to float and carry it over shallow sections, low islands, and other natural obstructions. There was an alternate breaking and lodging of the ice and the formation of ice gorges. These conditions were outstanding during the latter part of February and early in March, and at many localities the backwater from ice dams far exceeded flood stages.

Fortunately the continued melting of snow together with small amounts of rainfall furnished sufficient run-off, with the assistance of water impounded by ice dams, to float most of the ice out of the streams before the heavy rains of March 11 and 12 caused many of them to exceed flood stages. Before the streams had receded to normal conditions, additional precipitation, with outstanding amounts on March 16-18, resulted in the greatest floods known in the lower reaches of the Allegheny and Monongahela Rivers, the Ohio River at Pittsburgh, the West Branch of the Susquehanna River, and the Susquehanna River from the confluence of its North and West Branches at Sunbury to Chesapeake Bay. The Delaware River was at its highest stage in 33 years, and it would have attracted considerable attention if it had not been completely overshadowed by the extreme conditions in the central and western parts of the State.

A special report entitled "The Floods of March 1936 in Pennsylvania" containing basic hydrologic data pertinent to the floods was prepared and published late in September 1936. Copies of this report can be obtained upon request to the Department of Forests and Waters, Division of Hydrography, Harrisburg, Pennsylvania.

The stream flows were seriously affected by ice during the 1935-36 winter months, although the stream discharge did not recede to the

usual low flows during the ice periods. This may have been due to the heavy snow cover that prevented, to a large extent, an impervious strata of frozen ground surface. Ground water elevations were exceptionally high following the flood periods, but the streams receded rapidly. With the exception of August there were deficiencies in precipitation each month from April to September. During the months May to September the stream discharge was materially below the usual amount. As represented by drainage areas that totaled 39,927 square miles, the total discharge for the 5 months was only 46 per cent of the mean flow for the stations used during their entire term of record.

The flow in the principal drainage basins of the State for the year ending September 30, 1936, was 12.5 per cent above the mean flow for the 27 years 1910-36, as determined from the total discharge of the Delaware River at Riegelsville, Susquehanna River at Harrisburg, Allegheny River at Franklin, Kiskiminetas River at Avonmore, and Youghiogheny River at Connellsville, which drain a total area of 39,475 square miles or an area equivalent to 87.5 per cent of that of Pennsylvania.

In the Delaware River, the flow for the 1936 water year was 23.2 per cent above the mean flow for the 27 years 1910-36. The flow in the Susquehanna River was 14.6 per cent above the average flow for the 27 years, while the combined discharge of the Allegheny, Kiskiminetas and Youghiogheny Rivers was only one-half of one per cent above the mean for the same period.

Without exception, the high stages in the principal streams of Pennsylvania occurred in March. The low flows, irrespective of drainage basins or section of the State, were scattered through the months of October, July, August, and September.

FLOOD WARNING

The Flood Warning Service was continued in the Susquehanna Basin throughout the year. Except for the flood warnings during the great flood of March 1936, inaccurate and incomplete as they may have been, the additional loss of life and property in certain localities might have amounted to staggering figures.

Flood warnings had never been made for any such high stages in Pennsylvania. The loss of communication with gaging stations made it necessary to increase the predicted heights several times on a basis of miscellaneous fragmentary reports. At the present time the forecasts by the United States Weather Bureau and the Department of Forests and Waters constitute Pennsylvania's most effective agencies for flood protection.

PRECIPITATION

Thirty-eight precipitation stations are maintained by the Department of Forests and Waters, and records are received for 15 other stations operated by water companies. Prior to 1920 the Water Supply Commission of Pennsylvania published its precipitation records in their annual reports. Since that time, with the exception of stations that are located in close proximity to others, these records may be found in the monthly and annual reports of the United States Weather Bureau. Records for stations not published by the Weather Bureau are available at the office of the Department of Forests and Waters, Division of Hydrography, Harrisburg, Pennsylvania.

The average precipitation for the State during the year ending September 30, 1936, as deducted from the observations at 140 well-distributed stations, was 41.52 inches—a deficiency of 0.58 inch as compared with the average, which was computed from the 49 years record 1888 to 1936.

The yearly totals ranged from a minimum of 23.39 inches at Erie, Erie County, to a maximum of 57.80 inches at Hinckston Run, Cambria County. There were 8 months in the year with deficiencies in precipitation that ranged from 0.30 to 1.79 inches. During the remaining 4 months there were excesses in amounts that ranged from 0.73 to 3.30 inches.

The average precipitation for March was the greatest on record for that month in any year; however, it was not exceptional on the northwestern, west-central, and southeastern sections of the State. The monthly amounts ranged from 3.01 inches at Grove City, Mercer County, to 12.57 inches at the Mosquito Creek station near Williamsport, Lycoming County. A comparison of the monthly records with the average monthly amounts for the 49 years 1888 to 1936 is shown in the following table.

PRECIPITATION ON PENNSYLVANIA FOR THE YEAR ENDING
SEPT. 30, 1936

Month	Precipitation in inches		
	49-year Average	1935-36	Departure
October	3.16	2.77	-0.39
November	2.86	3.84	+ .98
December	3.11	2.62	- .49
January	3.22	4.21	+ .99
February	2.86	2.33	- .53
March	3.54	6.84	+3.30
April	3.39	3.01	- .38
May	3.88	2.09	-1.79
June	4.10	3.80	- .30
July	4.28	2.88	-1.40
August	4.23	4.96	+ .73
September	3.47	2.17	-1.30
The Year	42.10	41.52	- .58

The distribution of precipitation on Pennsylvania during the year ending September 30, 1936, is shown on the following map.

As deducted from the records of the 180 precipitation stations in Pennsylvania, used by the Division of Hydrography in determining the per cent run-off to precipitation at gaging stations, the average precipitation was about 46 inches on the Delaware River Basin, 41.5 inches on the Susquehanna River Basin, and 40 inches on the Ohio River Basin.

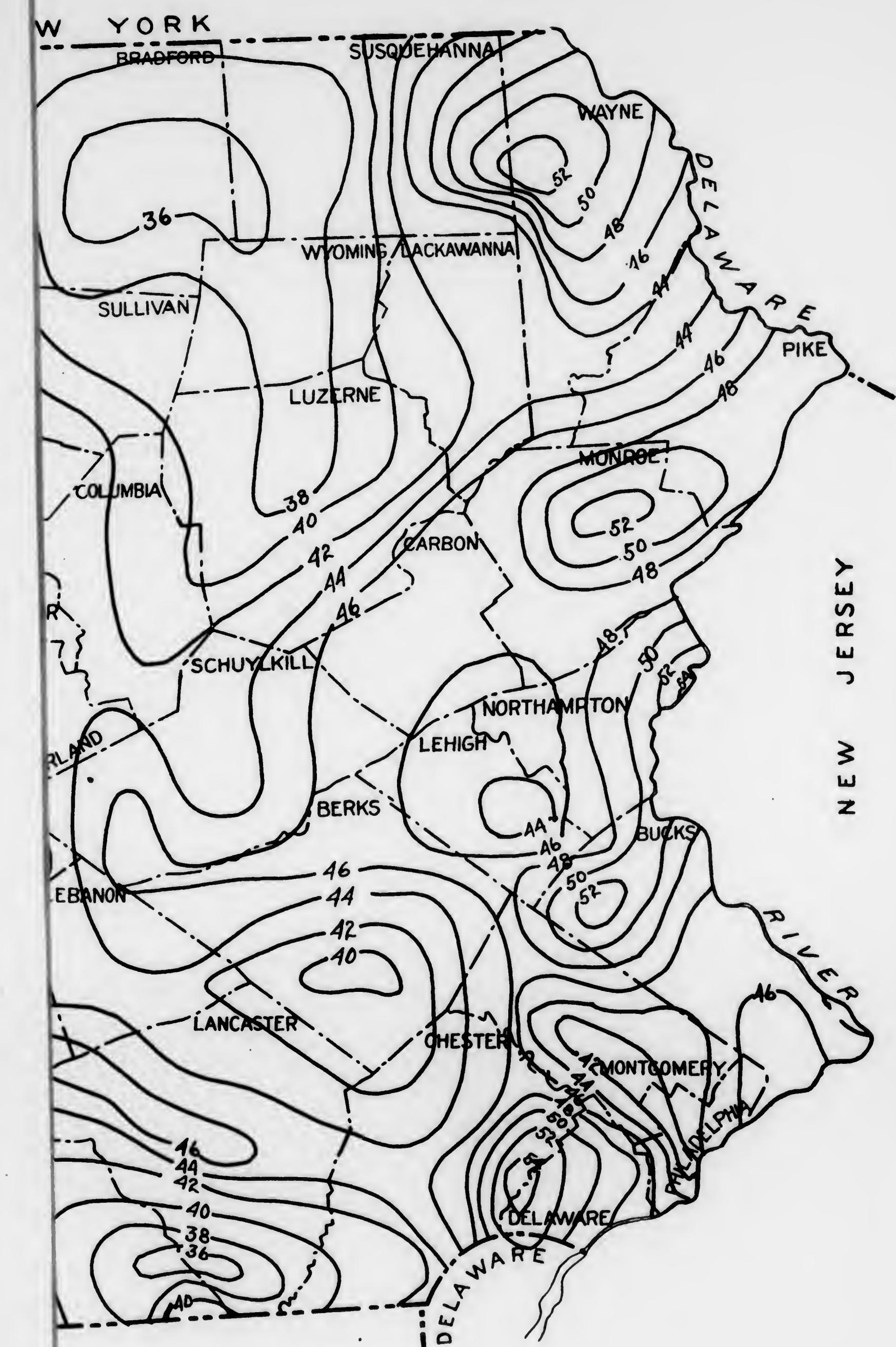
The monthly and yearly precipitation on Pennsylvania is shown in the following table.

Precipitation on Pennsylvania for the 49 years ending Sept. 30, 1936.

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
1887-88 ----	1.70	1.92	3.56	4.19	2.50	3.55	2.52	4.24	3.04	3.45	7.05	4.84	42.56
1888-89 ----	4.02	3.37	3.14	3.54	1.96	2.90	4.50	5.91	5.43	6.80	3.24	5.05	49.86
1889-90 ----	3.85	6.72	2.77	3.04	4.32	5.15	3.46	6.71	3.42	3.52	5.76	4.57	53.29
1890-91 ----	5.87	1.49	3.97	3.64	4.61	5.10	2.08	2.12	4.50	6.32	5.09	2.39	47.18
1891-92 ----	3.06	2.65	4.09	4.77	1.75	4.14	2.04	5.70	5.64	3.93	3.77	2.81	44.35
1892-93 ----	.72	4.34	1.69	2.85	5.92	2.52	4.74	5.54	3.12	3.15	4.50	2.67	41.76
1893-94 ----	3.26	2.93	3.06	2.29	3.53	1.63	3.62	8.88	2.57	2.32	1.84	6.30	42.23
1894-95 ----	4.26	2.50	3.95	4.17	1.22	2.31	3.76	2.68	3.50	3.24	3.23	1.71	36.53
1895-96 ----	1.99	2.48	3.22	1.43	4.90	4.51	1.75	2.85	4.64	6.89	2.22	4.82	41.70
1896-97 ----	3.19	3.55	1.20	2.15	3.28	3.22	3.30	5.24	3.38	6.26	3.17	2.18	40.12
1897-98 ----	1.32	5.28	3.95	4.25	2.23	4.31	2.93	5.11	2.79	3.36	6.60	1.70	43.83
1898-99 ----	5.20	4.03	2.93	3.05	4.05	4.87	1.76	3.82	3.51	3.91	4.01	4.70	45.89
1899-00 ----	1.55	2.66	3.04	2.64	4.22	3.61	1.57	2.79	3.60	4.86	3.33	1.77	35.64
1900-01 ----	2.74	4.10	2.08	2.22	.06	4.14	5.41	5.56	3.47	3.88	6.81	3.39	44.76
1901-02 ----	1.23	2.56	5.91	2.80	3.99	3.98	3.56	1.96	5.97	6.04	2.62	4.66	45.28
1902-03 ----	4.64	1.53	5.54	3.31	4.40	4.52	3.53	1.67	6.53	5.36	5.29	2.09	48.50
1903-04 ----	4.64	2.18	2.66	8.55	2.41	4.29	3.45	3.78	4.06	4.68	4.36	3.37	43.43
1904-05 ----	2.87	1.14	2.48	3.70	1.70	3.86	2.84	2.59	4.39	4.87	5.71	3.41	39.56
1905-06 ----	4.23	2.47	3.57	2.53	1.70	4.46	3.13	3.23	5.43	4.31	5.62	2.46	43.14
1906-07 ----	4.46	1.48	3.97	4.36	1.91	4.26	2.64	3.08	4.99	3.84	2.94	6.37	44.30
1907-08 ----	3.16	3.60	4.30	2.68	4.65	4.76	3.51	6.28	2.36	4.81	3.22	1.60	44.93
1908-09 ----	1.95	.90	2.86	2.92	4.84	3.07	5.39	2.90	4.48	2.14	2.31	2.27	36.03
1909-10 ----	2.27	1.40	3.39	5.55	3.59	.56	5.07	3.38	4.31	2.42	2.61	4.49	39.04
1910-11 ----	1.91	2.45	2.65	3.54	2.27	2.57	3.79	1.97	4.71	2.81	7.63	5.29	41.59
1911-12 ----	4.83	2.84	3.27	1.92	2.20	5.05	4.39	3.15	3.36	5.29	5.02	5.57	46.89
1912-13 ----	2.74	2.17	3.27	4.95	1.84	5.27	3.82	3.86	2.26	4.16	2.69	3.28	40.31
1913-14 ----	5.44	3.05	2.63	3.37	2.78	2.61	4.66	3.34	3.71	4.19	3.85	.99	40.62
1914-15 ----	2.35	1.76	4.63	5.56	3.90	1.28	1.92	4.16	4.00	5.23	6.71	2.56	44.11
1915-16 ----	2.65	2.18	4.06	2.42	3.08	4.12	3.65	3.19	6.14	4.45	2.57	3.77	42.28
1916-17 ----	2.25	2.27	3.07	3.60	1.46	3.68	2.08	3.39	5.38	4.33	6.69	2.31	40.51
1917-18 ----	6.38	.63	1.78	3.51	2.46	2.34	4.53	5.04	3.46	3.05	4.12	3.97	41.27
1918-19 ----	3.17	2.03	3.38	2.53	2.23	3.57	2.70	5.80	3.90	5.90	5.43	2.07	42.71
1919-20 ----	4.77	5.35	2.61	2.47	2.44	2.83	4.39	2.02	4.97	4.37	4.66	3.99	44.87
1920-21 ----	1.67	3.54	3.28	2.58	2.59	3.33	3.11	3.93	3.12	4.13	3.83	4.68	39.79
1921-22 ----	2.16	5.75	2.59	2.26	1.99	4.37	3.17	3.21	5.11	3.68	3.14	1.48	38.91
1922-23 ----	2.51	1.21	2.75	4.26	2.16	2.49	2.94	3.50	2.73	4.24	3.10	3.55	35.44
1923-24 ----	2.38	2.83	4.99	4.34	2.94	2.88	4.15	5.71	5.57	3.42	3.78	0.44	49.38
1924-25 ----	.28	1.54	2.13	3.53	2.16	2.56	2.32	3.49	3.04	5.57	2.28	2.80	31.70
1925-26 ----	4.83	3.56	1.72	2.80	4.03	1.91	2.03	1.78	3.63	3.82	5.60	5.81	41.64
1926-27 ----	4.51	4.49	2.58	2.90	3.48	2.61	3.52	4.14	3.72	4.97	4.12	2.08	43.12
1927-28 ----	6.40	4.95	4.41	2.08	3.42	3.24	5.50	2.23	7.96	5.44	4.60	2.33	52.56
1928-29 ----	1.78	2.32	1.16	3.37	2.87	2.69	6.12	4.81	3.56	2.81	2.52	3.71	37.72
1929-30 ----	5.59	3.39	2.77	2.25	2.69	3.03	2.71	3.03	4.20	2.23	1.47	2.45	35.81
1930-31 ----	.99	1.48	2.29	1.46	1.98	2.96	3.33	5.28	3.71	5.28	4.01	3.15	35.92
1931-32 ----	1.83	1.52	2.85	4.51	1.64	4.41	1.71	3.69	3.15	3.39	2.82	1.45	32.97
1932-33 ----	5												

PRECIPITATION

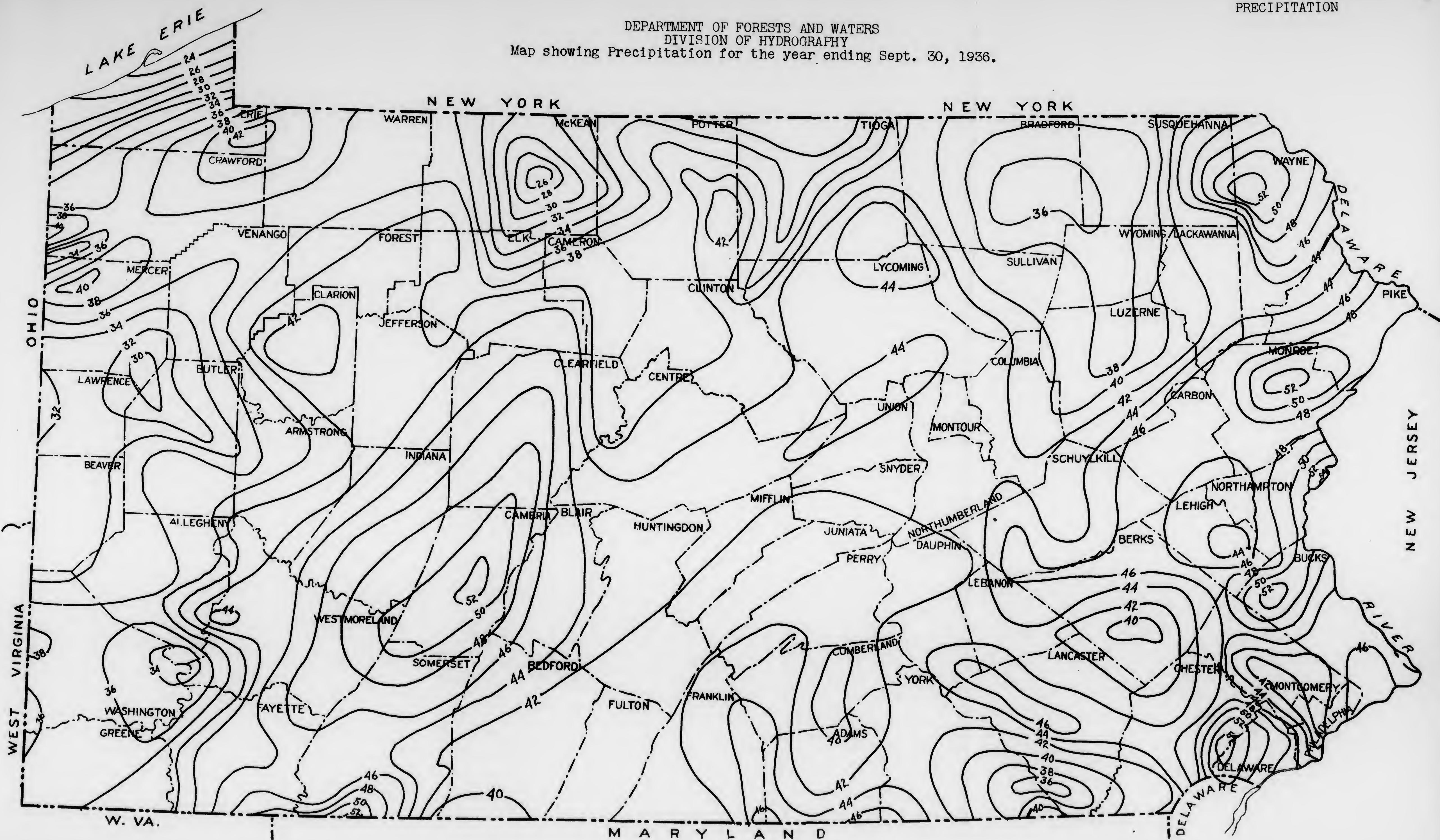
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PRECIPITATION

DEPARTMENT OF FORESTS AND WATERS
DIVISION OF HYDROGRAPHY

Map showing Precipitation for the year ending Sept. 30, 1936.



STREAM FLOW RECORDS
DEFINITIONS OF TERMS

The volume of water flowing in a stream—the "run-off" or "discharge"—is expressed in various terms, each of which has become associated with a certain class of work. These terms may be divided into two groups—(1) those that represent a rate of flow, as second-feet, gallons per minute, and discharge in second-feet per square mile, and (2) those that represent the actual quantity of water, as run-off in inches, acre-feet and millions of cubic feet. The principal terms used in this series of reports are second-feet, second-feet per square mile, and run-off in inches. They may be defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot is the rate of discharge of water flowing in a channel of rectangular cross section 1 foot wide and 1 foot deep at an average velocity of 1 foot per second. It is generally used as a fundamental unit from which others are computed.

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

"Run-off in inches" is the depth to which an area would be covered if all the water flowing from it in a given period were uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in inches.

An "acre-foot" is equivalent to 43,560 cubic feet and is the quantity required to cover an acre to the depth of 1 foot. The term is commonly used in connection with storage and irrigation.

The following terms not in common use are here defined:

"Stage-discharge relation"—an abbreviation for the term "relation of gage height to discharge."

"Control"—a term used to designate the natural section or stretch of the channel or artificial structure below the gage which determines the stage-discharge relation at the gage.

CONVERSION TABLES

The following tables afford a ready means of conversion between the terms in common use in hydraulic computations.

Discharge in second-feet per square mile into run-off in depth in inches

Discharge (second-feet per square mile)	Run-off (depth in inches)				
	1 day	28 days	29 days	30 days	31 days
1	0.03719	1.041	1.079	1.116	1.153
2	.07438	2.083	2.157	2.231	2.306
3	.11157	3.124	3.236	3.347	3.459
4	.14876	4.165	4.314	4.468	4.612
5	.18595	5.207	5.393	5.578	5.764
6	.22314	6.248	6.471	6.694	6.917
7	.26033	7.289	7.550	7.810	8.070
8	.29752	8.331	8.628	8.926	9.223
9	.33471	9.372	9.707	10.041	10.376

Note—For part of a month multiply the run-off for 1 day by the number of days.

Discharge in second-feet into run-off in acre-feet

Discharge (second-feet)	Run-off (acre-feet)				
	1 day	28 days	29 days	30 days	31 days
1	1.983	55.54	57.52	59.50	61.49
2	3.967	111.1	115.0	119.0	123.0
3	5.950	166.6	172.6	178.5	184.5
4	7.934	222.1	230.1	238.0	246.0
5	9.917	277.7	287.6	297.5	307.4
6	11.890	333.2	345.1	357.0	368.9
7	13.88	388.8	402.6	416.5	430.4
8	15.87	444.3	460.2	476.0	491.9
9	17.85	499.8	517.7	535.5	553.4

Note—For part of a month multiply the run-off for 1 day by the number of days.

Discharge in second-feet into run-off in millions of cubic feet

Discharge (second-feet)	Run-off (millions of cubic feet)				
	1 day	28 days	29 days	30 days	31 days
1	0.0864	2.419	2.506	2.592	2.678
2	.1728	4.838	5.012	5.184	5.356
3	.2592	7.257	7.518	7.776	8.084
4	.3456	9.676	10.02	10.37	10.71
5	.4320	12.10	12.53	12.96	13.39
6	.5184	14.51	15.04	15.55	16.07
7	.6048	16.98	17.54	18.14	18.75
8	.6912	19.35	20.05	20.74	21.42
9	.7776	21.77	22.55	23.33	24.10

Note—For part of a month multiply the run-off for 1 day by the number of days.

Discharge in second-feet into run-off in millions of gallons

Discharge (second-feet)	Run-off (millions of gallons)				
	1 day	28 days	29 days	30 days	31 days
1	0.6463	18.10	18.74	19.39	20.04
2	1.293	36.20	37.48	38.78	40.06
3	1.939	54.30	56.22	58.17	60.12
4	2.585	72.40	74.96	77.53	80.16
5	3.232	90.50	93.70	96.95	100.2
6	3.878	108.6	112.4	116.3	120.2
7	4.524	126.7	131.2	135.7	140.3
8	5.170	144.8	149.9	155.1	160.3
9	5.817	162.9	168.7	174.5	180.4

Note—For part of a month multiply the run-off for 1 day by the number of days.

Velocity in feet per second into velocity in miles per hour
(1 foot per second=0.681818 mile per hour, or very nearly two-thirds mile per hour; 1 mile per hour=1.46666 feet per second. In computing the table the values 0.68182 and 1.4667 were used).

Feet per second (units)	Miles per hour for tenths of foot per second									
	0	1	2	3	4	5	6	7	8	9
0	0.000	0.068	0.136	0.205	0.273	0.341	0.409	0.477	0.545	0.614
1	.682	.750	.818	.886	.955	1.02	1.09	1.16	1.23	1.30
2	1.36	1.43	1.50	1.57	1.64	1.70	1.77	1.84	1.91	1.98
3	2.05	2.11	2.18	2.25	2.32	2.39	2.45	2.52	2.59	2.66
4	2.73	2.80	2.86	2.93	3.00	3.07	3.14	3.20	3.27	3.34
5	3.41	3.48	3.55	3.61	3.68	3.75	3.82	3.89	3.95	4.02
6	4.09	4.16	4.23	4.30	4.36	4.43	4.50	4.57	4.64	4.70
7	4.77	4.84	4.91	4.98	5.05	5.11	5.18	5.25	5.32	5.39
8	5.45	5.52	5.59	5.66	5.73	5.80	5.86	5.93	6.00	6.07
9	6.14	6.20	6.27	6.34	6.41	6.48	6.55	6.61	6.68	6.75

CONVENIENT EQUIVALENTS

LENGTH
1 inch=1/12 foot=0.027778 yard=0.000015783 mile=2.54 centimeters.
1 foot=12 inches=1/3 yard=0.00015939 mile=0.3048 meter.
1 yard=36 inches=3 feet=0.00056818 mile=0.9144 meter.
1 mile=63,360 inches=5,280 feet=1,760 yards=1.60935 kilometers.
1 meter=100 centimeters=0.001 kilometer=39.37 inches=3.2808 feet=1.0936 yards=0.00062137 mile.

SURFACE
1 square inch=0.006944 square foot=0.0007716 square yard=0.0000001594 acre=0.0000000002491 square mile=6.46163 square centimeters.
1 square foot=144 square inches=1/9 square yard=0.00022957 acre=0.00000003587 square mile=0.092903 square meter.
1 square yard=1,296 square inches=9 square feet=0.0002066 acre=0.0000003228 square mile=0.83613 square meter.
1 acre=6,272,640 square inches=43,560 square feet=4,840 square yards=0.0015625 square mile=208.71 feet square=0.404687 hectare.
1 square mile=4,014,480,600 square inches=27,878,400 square feet=3,097,600 square yards=640 acres=259 hectares.
1 squaremeter=10,000 square centimeters=0.0001 hectare=0.000001 square kilometer=1,550 square inches=10.7639 square feet=1.19698 square yards=0.0002471 acre=0.0000003861 square mile.

VOLUME
1 cubic inch=0.004329 United States gallon=0.0005787 cubic foot=16.3872 cubic centimeters.
1 United States gallon=231 cubic inches=0.13308 cubic foot=0.00000307 acre foot=3.78549 liters.
1 cubic foot=1,728 cubic inches=7.4805 United States gallons=0.037037 cubic yard=0.000022957 acre-foot=28.317 liters.
1 cubic yard=46.656 cubic inches=27 cubic feet=0.00061983 acre-foot=0.76456 cubic meter.
1 acre-foot=325.851 United States gallons=43,500 cubic feet=1,613.333 cubic yards=1,233.49 cubic meters.
1 cubic meter, stere, or kiloliter=1,000,000 cubic centimeters=1,000 liters=61,023.4 cubic inches=264.17 United States gallons=35.3145 cubic feet=1.30794 cubic yards=0.000810708 acre-foot.

HYDRAULICS

1 United States gallon of water weighs 8.34 pounds avoirdupois.
1 cubic foot of water weighs 62.5 pounds avoirdupois.
1 second-foot=7.48 United States gallons per second=448.8 United States gallons per minute=26,929.9 United States gallons per hour=646,317 United States gallons per day.
1 second-foot=60 cubic feet per minute=3,600 cubic feet per hour=86,400 cubic feet per day=31,536,000 cubic feet per year=0.000214 cubic mile per year.
1 second-foot=0.9917 acre-inch per hour=1.983471 acre-feet per day=723.966042 acre-feet per year.
1 second-foot=0.028317 cubic meter per second=1.699 cubic meters per minute=101.941 cubic meters per hour=2,446.58 cubic meters per day.
1 second-foot for 1 year (365 days) will cover 1 square mile 1.1312 feet or 13.5744 inches deep.
1 second-foot falling 10 feet=1.135 horsepower.
100 United States gallons per minute=0.223 second-foot=0.442 acre-foot in one day.
1 million gallons per day=1.55 second-foot=3.07 acre-feet per day=2.629 cubic meters per minute.
1 million gallons per month=0.05525 second-foot for one 28-day month=0.05334 second-foot for one 29-day month=0.05157 second-foot for one 30-day month=0.04990 second-foot for one 31-day month.
1,000,000,000 (1 United States billion) cubic feet=11,570 second-foot for one day=413 second-foot for one 28-day month=39 second-foot for one 29-day month=386 second-foot for one 30-day month=373 second-foot for one 31-day month.
1 horsepower=1 second-foot falling 8.8 feet.
1 horsepower=1 second-foot falling 11.0 feet, 80 percent efficiency.
1 horsepower=5,694,120 foot-gallons per day=550 foot-pounds per second=2,545 British thermal units per minute=1,980,000 foot-pounds per hour=76 kilogrammeters per second=1.27 kilogrammeters per minute=746 watts.
1.3405 horsepower=1 kilowatt.
1 inch deep on 1 square mile=2,323,200 cubic feet=0.0737 second-foot for 1 year.
1 foot deep (head of 1 foot)=0.434 pound pressure on 1 square inch.
1 cubic meter per minute=0.5886 second-foot=4.403 United States gallons per second=1.1674 acre-feet per day.
1 foot per second=0.68 mile per hour=1.097 kilometers per hour.
Acceleration of gravity, g=32.16 feet per second.

EXPLANATION OF DATA

The data presented in this report cover the year beginning October 1, 1935, and ending September 30, 1936. At the beginning of January in most parts of the United States much of the precipitation in the preceding 3 months is stored in the form of snow or ice, or in ponds, lakes, and swamps, or as underground water, and this stored water passes off in the streams during the spring months. At the end of September, on the other hand, the only stored water available for runoff is possibly a small quantity in the ground; therefore, the runoff for the year beginning October 1 is practically all derived from precipitation within that year.

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the gage heights and discharge measurements in determining the daily flow. The records of stage are obtained either from direct readings on a staff or chain gage or from a water-stage recorder that gives a continuous record of the fluctuations. Measurements of discharge are made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge.

Rating tables giving the discharge for any stage are computed from the rating curves which are constructed from the discharge measurements. The application of the daily gage height to these rating tables gives the daily discharge from which the monthly and yearly mean discharge is computed.

The data presented for each gaging station covered by this report comprise a description of the station, a table showing the daily discharge of the stream, a table of monthly and yearly discharge and run-off, and a summary table of run-off in second-feet per square mile, run-off depth in inches, precipitation, and per cent run-off to precipitation. For stations with insufficient base data to determine the daily discharge, the results of current-meter discharge measurements are published in the table of miscellaneous discharge measurements.

The description of the station gives, in addition to statements regarding location and type of gage, information as to diversions that decrease the flow at the gage, artificial regulation, maximum and minimum recorded discharges, accuracy of the records, and average discharge for the stations that have a record for ten or more years. The maximum discharge given under "Extremes" represents the crest discharge determined from records of stage by water-stage recorders, or in case of nonrecording gages it is determined from flood marks or from graphs based on gage readings made once daily or more frequently.

The table of daily discharge gives, in general, the discharge in second-feet corresponding to the daily gage height, which may be the mean of two or more readings daily in the case of a nonrecording gage, or the mean daily gage height obtained from a water-stage recorder graph.

At stations on streams subject to sudden or rapid diurnal fluctuation, the discharge obtained from the rating table and the mean daily gage height may not be the true mean discharge for the day. If such stations are equipped with water-stage recorders, the mean daily discharge may be obtained by averaging discharge at regular intervals during the day or by using an instrument known as the discharge integrator, which has a setting to correspond with the rating curve of a station and determines the mean daily discharge from a continuous gage-height graph.

In the table of monthly discharge, the column headed "Maximum" gives the maximum daily discharge and not the discharge when the water surface was at crest height. Likewise, in the column headed "Minimum," the quantity given is the minimum daily discharge. The column headed "Mean" is the average flow in cubic feet per second during the month. On this average flow are based computations recorded in the remaining columns, which are defined on page 18.

ACCURACY OF FIELD DATA AND COMPUTED RECORDS

The accuracy of stream-flow data depends primarily (1) on the permanency of the stage-discharge relation and (2) on the accuracy of observation of stage, measurements of flow, and interpretation of records.

The station description gives a statement in regard to the general accuracy of the records. "Excellent" indicates that records are accurate within 5 per cent; "good," within 10 per cent; "fair," within 15 per cent; and "poor," within 20 per cent or more.

The monthly means for any station may represent with high accuracy the quantity of water flowing past the gage, but the figures showing discharge per square mile and run-off in inches may be subject to gross errors caused by the inclusion of large noncontributing districts in the measured drainage area.

The table of monthly discharge gives a general idea of the flow at the station. The table of daily discharge allows more detailed studies of the variation in flow. It should be borne in mind, however, that the observations in each succeeding year may be expected to throw new light on data previously published.

COOPERATION

Acknowledgment is due the following agencies for equipment and assistance in the collection of records.

- American Sheet and Tin Plate Co., Vandergrift, Pa., (Vandergrift).
- Bethlehem Steel Co., Johnstown, Pa., (Johnstown).
- City of Lancaster, (Lancaster).
- City of New Castle, (New Castle).
- City of Philadelphia, (Philadelphia).
- City of Wilmington, Del., (Chadds Ford).
- Clarion River Power Co., Johnstown, Pa., (Piney).
- Glatfelter Paper Co., Spring Grove, Pa., (Spring Grove).
- Panther Valley Water Co., Lansford, Pa., (Tamaqua).
- Penn Central Power Co., Altoona, Pa., (Saxton).
- Pennsylvania Power and Light Co., Allentown, Pa., (Wilsonville).
- Philadelphia Electric Co., Philadelphia, Pa., (Castle Fin, Harrisburg, Lancaster, and Manchester).
- Robert O. Hayt, Consulting Engineer, Corning, N. Y., (Loyalsock).
- Safe Harbor Water Power Corp., Baltimore, Md., (Marietta).
- Philadelphia Suburban Water Co., Bryn Mawr, Pa., (Langhorne and Woodlyn).
- United States Engineer Office, Baltimore, Md., (Dalmatia, Gapsville, Huntingdon, Marklesburg, Millerstown, Penns Creek, Shermandale, and Wapwallopen).
- United States Engineer Office, Philadelphia, Pa., (Bethlehem and Tannery).
- United States Engineer Office, Pittsburgh, Pa., (Charleroi, Franklin, Larabee, Parkers Landing, Sugar Creek, Sutersville, Utica, and Wampum).
- United States Geological Survey, Albany, N. Y., (Port Jervis).

United States Geological Survey, Trenton, N. J., (Belvidere, Riegelsville, and Trenton).
 United States Geological Survey, Washington, D. C., (Bedford Valley, Salisbury, and Sylvan).
 United States Weather Bureau, Harrisburg, Pa., (Corning, Newport, and Sunbury).
 West Penn Power Co., Pittsburgh, Pa., (Connellsville).
 York Water Co., York, Pa., (York).

The Commonwealth of Pennsylvania is divided into six drainage basins: Delaware, Susquehanna, Potomac, Genesee, Erie, and Ohio. The hydrographic data in the following pages are divided into four groups corresponding to the basins in which the stations are located. There are no gaging stations in the Erie or Genesee Basins. The stations in each basin are shown in the following tables and their locations are indicated on the stream gaging map with reference numbers corresponding to those given in the tables.

GAGING STATIONS IN DELAWARE RIVER BASINS*

Station No.	Stream	Location
1	Delaware River	Port Jervis, N. Y.
2	Delaware River	Belvidere, N. J.
3	Delaware River	Riegelsville, N. J.
4	Delaware River	Trenton, N. J.
5	Lackawaxen River	West Hawley
6	Wallenpaupack Creek	Wilsonville
7	Bushkill Creek	Shoemakers
8	McMichaels Creek	Stroudsburg
9	Lehigh River	Tannery
10	Lehigh River	Bethlehem
11	Tohickon Creek	Pipersville
12	Neshaminy Creek	Langhorne
13	Schuylkill River	Pottstown
14	Schuylkill River	Philadelphia
15	Little Schuylkill River	Tamaqua
16	Perkiomen Creek	Graters Ford
17	Crum Creek	Woodlyn
18	Ridley Creek	Moylan
19	Chester Creek	Chester
20	White Clay Creek	Newark, Del.
21	Brandywine Creek	Chadds Ford

* For information available on each station, see description of station.

GAGING STATIONS IN SUSQUEHANNA RIVER BASIN*

Station No.	Stream	Location
1	North Branch of Susquehanna River	Binghamton, N. Y.
2	North Branch of Susquehanna River	Towanda
3	North Branch of Susquehanna River	Wilkes-Barre
4	North Branch of Susquehanna River	Danville
5	Susquehanna River	Sunbury
6	Susquehanna River	Harrisburg
7	Susquehanna River	Marietta
8	Chemung River	Corning, N. Y.
9	Towanda Creek	Monroeton
10	Tunkhannock Creek	Dixon
11	Wapwallopen Creek	Wapwallopen
12	West Branch of Susquehanna River	Bower
13	West Branch of Susquehanna River	Renovo
14	West Branch of Susquehanna River	Lock Haven
15	West Branch of Susquehanna River	Williamsport
16	Clearfield Creek	Dimeling
17	Driftwood Branch of Sinnemahoning Creek	Sterling Run
18	North Bald Eagle Creek	Beech Creek Station
19	Pine Creek	Cedar Run
20	Lycoming Creek	Trout Run
21	Loyalsock Creek	Loyalsock
22	Penn Creek	Penns Creek
23	Mahantango Creek East	Dalmatia
24	Frankstown Branch of Juniata River	Williamsburg
25	Juniata River	Newport
26	Shaver Creek	Petersburg
27	Standing Stone Creek	Huntingdon
28	Raystown Branch of Juniata River	Saxton
29	Dunning Creek	Yount
30	Brush Creek	Gapsville
31	Great Trough Creek	Marklesburg
32	Aughwick Creek	Orbisonia
33	Tuscarora Creek	Port Royal
34	Cocolamus Creek	Millerstown
35	Sherman Creek	Shermandale
36	Conodoguinet Creek	Hogestown
37	Swatara Creek	Harper Tavern
38	Upper Little Swatara Creek	Pine Grove
39	West Conewago Creek	Manchester
40	Codorus Creek	Spring Grove
41	South Branch of Codorus Creek	York
42	Conenstoga Creek	Lancaster
43	Muddy Creek	Castle Fin

GAGING STATIONS IN POTOMAC RIVER BASIN*

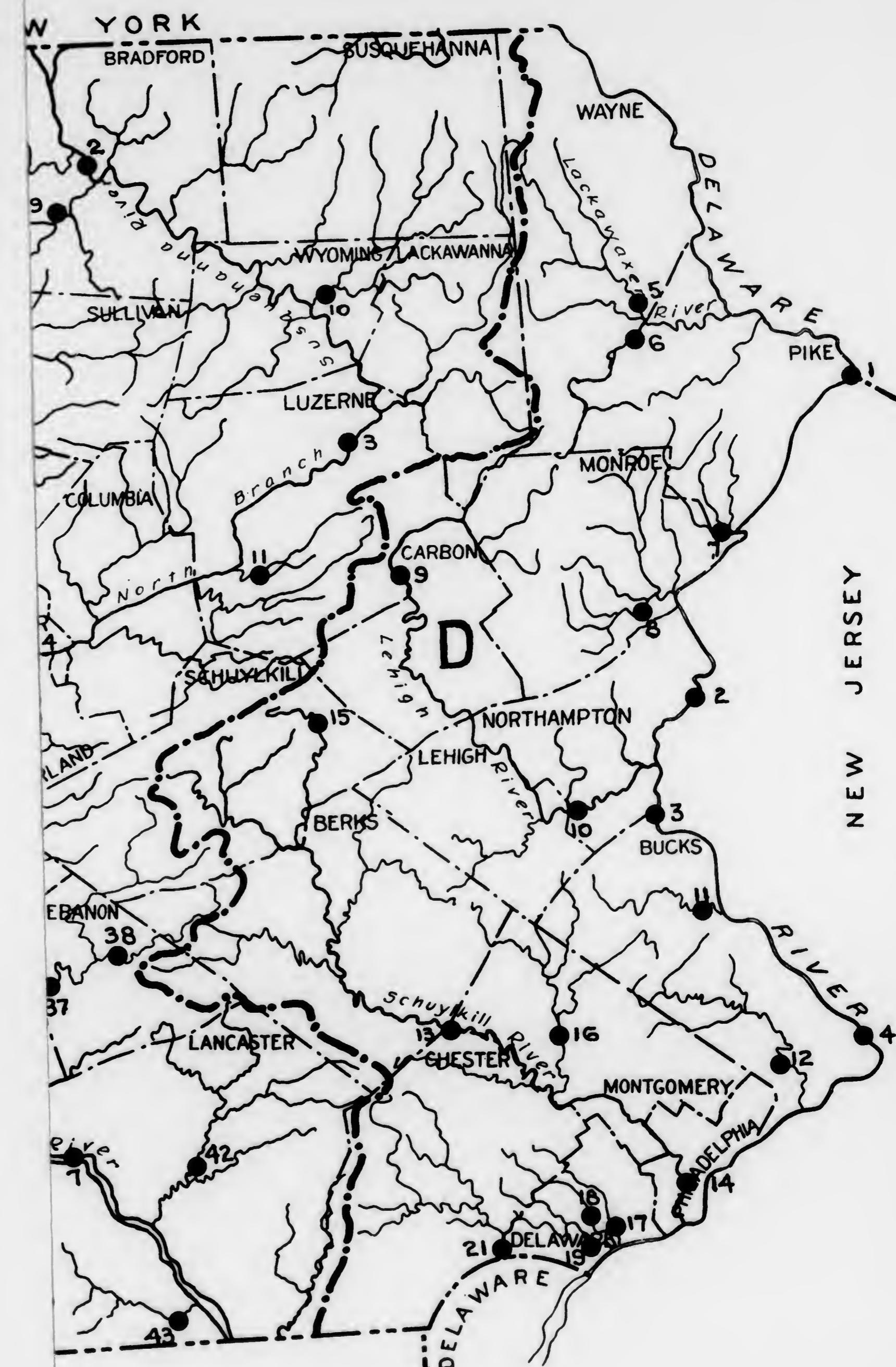
Station No.	Stream	Location
1	Evitts Creek	Bedford Valley
2	Licking Creek	Sylvan

* For information available on each station, see description of station.

GAGING STATIONS IN OHIO RIVER BASIN*

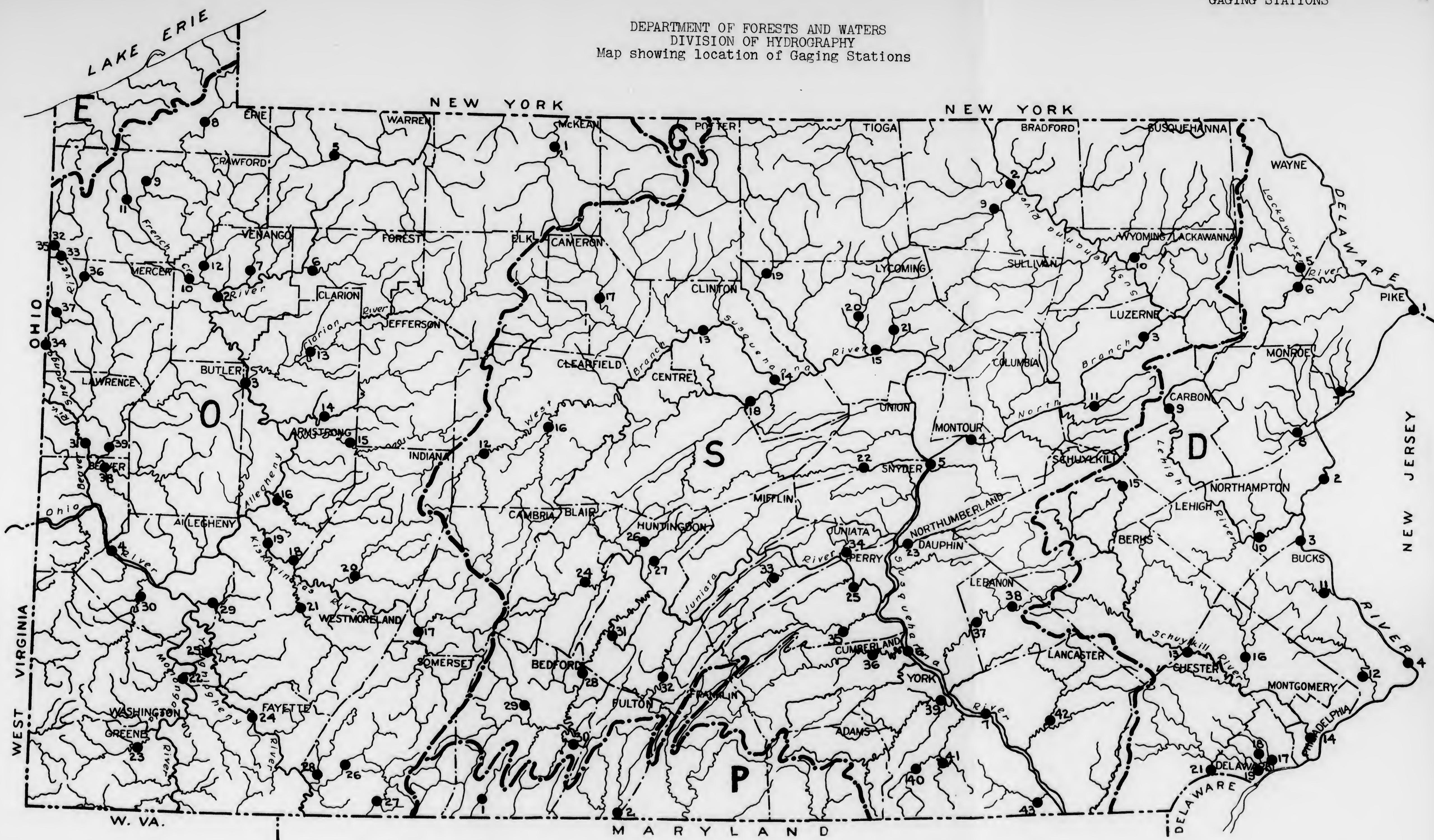
Station No.	Stream	Location
1	Allegheny River	Larabee
2	Allegheny River	Franklin
3	Allegheny River	Parkers Landing
4	Ohio River	Sewickley
5	Brokenstraw Creek	Youngsville
6	Tionesta Creek	Nebraska
7	Oil Creek	Rouseville
8	French Creek	Carters Corners
9	French Creek	Saegertown
10	French Creek	Utica
11	Cussewago Creek	Meadville
12	Sugar Creek	Sugarcreek
13	Clarion River	Piney
14	Redbank Creek	St. Charles
15	Mahoning Creek	Dayton
16	Crooked Creek	Ford City
17	Stony Creek	Johnstown
18	Kiskiminetas River	Avonmore
19	Kiskiminetas River	Vandergrift
20	Blacklick Creek	Blacklick
21	Loyalhanna Creek	New Alexandria
22	Monongahela River	Charleroi
23	South Fork of Tenmile Creek	Jefferson
24	Youghiogheny River	Connellsville
25	Youghiogheny River	Sutersville
26	Casselman River	Markleton
27	Big Piney Run	Salisbury
28	Laurel Hill Creek	Ursina
29	Turtle Creek	Trafford
30	Chartiers Creek	Carnegie
31	Beaver River	Wampum
32	Pymatuning Reservoir	Pymatuning Dam
33	Shenango River	Pymatuning Dam
34	Shenango River	Sharon
35	Sugar Run	Pymatuning Dam
36	Little Shenango River	Greenville
37	Pymatuning Creek	Orangeville
38	Connoquenessing Creek	Hazen
39	Slippery Rock Creek	Wurtemburg

* For information available on each station, see description of station.



E, Erie; O, Ohio.

DEPARTMENT OF FORESTS AND WATERS
DIVISION OF HYDROGRAPHY
Map showing location of Gaging Stations



Legend to Drainage Basins.— D, Delaware; S, Susquehanna; P, Potomac; G, Genesee; E, Erie; O, Ohio.

GAGING-STATION RECORDS

DELAWARE RIVER BASIN

DELAWARE RIVER BASIN

29

Delaware River at Port Jervis, N. Y.

Location. - Water-stage recorder, lat. $41^{\circ}22'20''$, long. $74^{\circ}41'50''$, near highway bridge at Port Jervis, Orange County, $\frac{1}{4}$ miles above mouth of Neversink River. Zero of gage is 415.35 feet above mean sea level (1912 adjustment).

Drainage area. - 3,076 square miles.

Records available. - October 1904 to September 1936.

Average discharge. - 32 years, 5,525 second-feet.

Extremes. - Maximum discharge during year, 108,000 second-feet Mar. 18 (gage height, 17.55 feet) from rating curve extended above 35,000 second-feet; minimum, about 320 second-feet Aug. 3 (gage height, about 0.94 foot); minimum daily discharge, 538 second-feet Sept. 27.

1904-36: Maximum discharge, that of Mar. 18, 1936; minimum, 175 second-feet Sept. 22, 23, 1908 (gage height, 0.60 foot); minimum daily discharge, 175 second-feet Sept. 22, 23, 1908.

Maximum stage known, 25.5 feet Mar. 8, 1904 (ice jam); maximum discharge known, 155,000 second-feet Oct. 10, 11, 1903, from rating curve extended above 35,000 second-feet.

Remarks. - Records excellent except those for Oct. 26-29, which are good and were computed from records for stations at Hale Eddy and Fishs Eddy, and those for periods of ice effect, Dec. 20, 21, Dec. 24 to Jan. 2, Jan. 23 to Mar. 12, which are fair and were computed on basis of one discharge measurement, gage heights, and weather records. Regulation from operation of power plants and from storage in Lake Wallenpaupack and in Toronto and Swinging Bridge Reservoirs; combined storage capacity 12,200,000,000 cubic feet. Records of storage in Lake Wallenpaupack furnished by Pennsylvania Power & Light Co., those for Toronto and Swinging Bridge Reservoirs furnished by Chas. H. Tenney & Co.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,600	24,300	15,800	2,400	2,800	4,600	12,800	5,250	2,000	1,830	1,440	2,580
2	1,520	10,600	12,000	2,600	2,600	4,400	11,800	4,820	2,490	1,440	665	1,830
3	1,740	6,900	9,800	4,000	2,400	4,800	12,800	4,440	2,540	1,880	661	1,530
4	1,640	5,300	8,100	5,400	2,400	4,400	11,600	4,760	2,580	1,420	1,610	1,380
5	1,560	4,450	6,600	7,700	2,600	4,600	9,100	4,760	2,430	1,100	1,530	1,160
6	940	3,800	5,600	7,100	2,600	5,000	12,200	4,440	2,250	1,130	1,370	1,010
7	1,040	6,000	4,850	5,600	2,400	5,000	24,400	4,140	1,650	1,770	1,650	1,010
8	1,600	5,300	4,400	5,300	2,400	5,000	19,700	4,000	1,400	1,380	1,480	1,010
9	1,380	5,700	5,200	5,300	2,200	4,800	16,300	3,890	2,160	1,720	1,010	1,800
10	1,180	4,950	6,300	4,450	2,000	5,500	14,800	3,920	2,130	1,830	1,070	1,880
11	980	4,150	7,000	4,550	2,200	15,000	15,600	3,540	2,150	1,700	1,600	1,890
12	660	4,650	5,900	4,400	2,400	72,700	15,400	3,550	2,160	1,400	1,710	1,810
13	740	5,800	5,100	4,350	2,200	59,500	17,300	3,540	1,960	1,190	1,560	948
14	680	39,200	4,950	4,550	2,200	34,200	21,700	4,400	1,460	1,670	1,810	873
15	1,580	24,500	5,000	4,650	2,400	23,800	19,200	4,090	1,050	1,670	1,820	1,440
16	1,420	14,500	6,700	5,400	2,200	25,400	17,700	3,750	1,950	1,630	899	1,310
17	1,100	10,800	7,200	6,600	2,200	48,300	15,000	3,300	1,760	1,500	912	1,170
18	940	9,600	6,200	6,300	2,400	93,100	13,000	3,020	1,880	1,210	991	1,010
19	1,020	8,800	5,300	4,350	2,600	82,800	11,000	3,250	7,380	606	900	1,570
20	630	8,200	4,800	3,500	2,400	57,700	9,800	3,300	7,140	671	1,330	840
21	660	11,400	4,200	3,800	2,400	42,400	8,800	3,240	4,860	1,550	1,470	778
22	1,140	11,000	3,650	4,250	2,200	44,300	9,300	3,170	3,910	1,570	1,100	1,420
23	1,540	9,400	3,100	4,000	1,200	31,400	9,100	2,930	5,010	1,680	1,910	1,060
24	1,220	7,600	3,400	4,000	1,400	23,800	7,700	2,520	2,530	1,800	3,600	1,050
25	980	6,300	3,000	3,800	2,400	19,900	6,880	2,600	2,330	1,480	3,340	1,000
26	850	6,000	2,600	2,800	2,600	17,300	6,120	2,750	2,210	975	2,490	748
27	750	5,600	3,000	2,800	3,200	15,800	5,940	2,740	1,980	843	1,850	538
28	700	6,000	3,400	3,400	4,600	21,800	5,760	2,610	2,020	1,490	1,560	692
29	600	20,700	2,800	3,400	5,000	19,600	5,250	2,590	1,610	1,650	1,430	956
30	1,140	24,400	2,400	2,800	16,000	5,080	2,400	1,850	1,570	1,560	1,600	1,530
31	19,200		2,600	2,800	14,000			2,070	1,530	2,630		

Month	Observed			(Mean)	Storage		
	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October.....	19,200	600	1,701	- 423			
November.....	39,200	3,800	10,530	+ 627			
December.....	15,800	2,400	5,515	+ 115			
January.....	7,700	2,400	4,398	- 178			
February.....	5,000	1,200	2,505	- 314			
March.....	93,100	4,400	26,670	+ 2,355			
April.....	24,400	5,080	12,370	- 307			
May.....	5,250	2,070	3,541	- 212			
June.....	7,580	1,400	2,588	- 402			
July.....	1,880	606	1,448	- 885			
August.....	3,600	661	1,579	- 455			
September.....	2,580	538	1,263	- 402			
The year.....	93,100	538	6,190	- 38		2.01	27.39

DELAWARE RIVER BASIN

Delaware River at Belvidere, N. J.

Location.—Water-stage recorder, lat. $40^{\circ}49'36''$; long. $75^{\circ}5'2''$, at Belvidere, Warren County, just below mouth of Pequest River. Zero of gage is 227.18 feet above mean sea level.

Drainage area.—4,542 square miles.

Records available.—October 1922 to September 1936.

Average discharge.—14 years, 7,855 second-feet, corrected for storage.

Extremes.—Maximum discharge during year, 179,000 second-feet Mar. 19 (gage height, 25.0 feet); minimum, 895 second-feet Oct. 29 (gage height, 2.45 feet).

1922-36: Maximum discharge, that of Mar. 19, 1936; minimum, 838 second-feet Sept. 28, 1932 (gage height, 2.37 feet).

Maximum stage known, 28.6 feet, from authentic high-water mark, Oct. 10, 1903 (discharge, 220,000 second-feet).

Remarks.—Records excellent except those for periods of ice effect, Dec. 28 to Jan. 1, Jan. 30 to Feb. 3, Feb. 5-13, 19-23, and for period of missing gage heights, Jan. 20-29, which are fair and were computed on basis of gage heights, weather records, and records at Riegelsville. Part of table of monthly discharge corrected for effect of storage in Lake Wallenpaupack and in Toronto and Swinging Bridge Reservoirs.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,480	37,900	27,800	3,600	5,000	7,030	17,600	7,730	3,040	3,140	1,850	3,360
2	2,200	19,600	20,600	3,700	4,700	6,860	16,100	7,910	3,250	3,040	1,740	3,140
3	2,120	15,700	17,100	7,640	4,700	6,860	16,500	7,050	3,470	2,630	1,160	2,340
4	2,210	10,200	14,100	11,200	4,580	7,200	16,800	6,860	3,700	2,830	1,010	2,040
5	2,160	8,640	11,500	11,500	4,600	7,380	13,700	7,730	3,700	2,440	1,720	1,850
6	2,070	7,200	10,200	11,500	4,450	7,550	19,100	7,200	3,360	2,040	1,820	1,590
7	1,590	7,030	8,460	10,000	4,200	7,550	36,600	6,530	2,940	2,020	1,710	1,450
8	1,460	8,460	7,910	9,020	4,000	7,550	32,400	6,060	2,340	2,540	1,850	1,440
9	2,050	7,550	8,090	9,020	4,200	7,380	25,400	5,900	2,160	2,160	1,760	1,480
10	1,870	7,550	9,020	10,600	4,100	8,460	23,000	6,060	2,940	2,440	1,330	2,070
11	1,700	6,530	10,000	8,830	3,700	16,400	22,400	5,590	2,830	2,630	1,490	2,250
12	1,440	6,210	9,600	8,460	3,700	114,000	22,400	5,440	3,140	2,440	2,020	2,210
13	1,250	7,910	8,270	8,090	3,900	123,000	21,800	5,140	3,580	2,050	2,050	2,110
14	1,170	27,400	7,730	8,090	4,060	64,200	26,600	6,060	3,700	1,760	1,920	1,450
15	1,160	35,500	7,380	7,730	4,060	41,000	26,000	7,200	3,250	2,340	2,140	1,180
16	1,790	20,600	8,830	11,000	4,190	35,900	23,600	6,060	3,700	2,200	2,070	1,740
17	1,800	15,600	10,200	11,000	4,060	5,500	21,200	5,290	3,360	2,160	1,380	1,720
18	1,530	14,100	9,410	10,600	3,820	126,000	18,100	4,720	4,060	2,020	1,300	1,550
19	1,350	13,200	8,270	9,410	3,600	166,000	15,600	5,000	7,250	1,770	1,320	1,320
20	1,400	12,300	7,550	5,400	3,500	111,000	13,700	6,060	12,300	1,250	1,190	1,670
21	1,170	14,100	6,000	3,500	68,200	12,800	5,590	11,000	1,080	1,520	1,280	
22	1,060	16,600	5,900	6,600	3,500	67,200	11,900	5,140	1,870	1,760	1,140	
23	1,460	14,600	4,720	6,000	3,500	49,000	12,800	4,720	6,860	1,970	1,490	1,710
24	1,640	12,800	4,450	5,000	3,250	34,500	11,000	4,190	5,440	2,250	3,470	1,400
25	1,520	10,600	4,720	5,800	3,140	28,400	9,600	3,820	4,720	2,440	5,140	1,370
26	1,370	9,800	4,450	6,200	4,060	24,200	8,640	4,190	4,190	1,950	4,060	1,320
27	1,200	9,410	3,820	5,600	5,290	22,400	8,090	4,060	3,940	1,460	3,140	1,120
28	1,090	9,600	3,800	5,000	6,700	27,800	7,910	4,190	3,700	1,260	2,440	1,010
29	962	25,800	3,400	6,000	7,200	29,000	7,550	3,940	3,360	1,840	2,250	986
30	3,070	38,900	3,400	5,800	23,000	7,030	3,700	3,040	1,950	2,250	1,260	
31	23,900	3,500	5,400	15,600			3,470	1,880	2,730			
Month	Observed			Corrected for storage			Mean	Per square mile	Run-off in inches			
	Maximum	Minimum	Mean	Mean	Per square mile	Run-off in inches						

Month	Observed			Corrected for storage			Mean	Per square mile	Run-off in inches
	Maximum	Minimum	Mean	Mean	Per square mile	Run-off in inches			
October.....	23,700	1,870	3,230	1,916	0.442	0.49	2,870	0.452	0.52
November.....	50,000	7,660	19,400	15,610	3.44	3.84	20,130	3.17	3.54
December.....	38,900	5,610	12,620	8,858	1.95	2.25	12,670	2.00	2.31
January.....	21,100	6,080	12,640	7,557	1.66	1.91	12,450	1.96	2.26
February.....	12,700	5,010	6,655	3,936	.867	.94	6,324	.997	1.08
March.....	204,000	11,200	57,470	44,880	9.88	11.39	59,930	9.45	10.90
April.....	51,200	10,200	24,630	17,220	3.79	4.23	24,310	3.83	4.27
May.....	10,900	5,460	7,923	5,355	1.18	1.36	7,707	1.21	1.40
June.....	14,600	3,630	6,400	5,355	.886	.99	6,003	.946	1.06
July.....	4,710	2,270	3,219	4,024	.273	.31	2,329	.367	.42
August.....	6,700	1,800	2,975	1,240	.284	.40	2,585	.407	.47
September.....	4,010	1,660	2,446	1,290	.284	.32	2,084	.328	.37
The year.....	204,000	1,660	13,340	9,484	2.09	28.43	13,320	2.10	28.60

DELAWARE RIVER BASIN

Delaware River at Riegelsville, N. J.

Location.—Water-stage recorder, lat. $40^{\circ}35'36''$, long. $75^{\circ}11'17''$, at suspension bridge at Riegelsville, Warren County, 600 feet above mouth of Musconetcong River, flow of which is included in records subsequent to Oct. 1, 1931. Zero of gage is 125.29 feet above mean sea level.

Drainage area.—6,344 square miles (includes drainage area of Musconetcong River).

Records available.—July 1906 to September 1936.

Average discharge.—30 years, 10,860 second-feet (including flow of Musconetcong River subsequent to Oct. 1, 1

Delaware River at Trenton, N. J.

Location.- Water-stage recorder, lat. $40^{\circ}13'18''$, long. $74^{\circ}46'38''$, 200 feet above Calhoun Street Bridge at Trenton, Mercer County, half a mile above mouth of Assumpink Creek. Zero of gage is 7.77 feet (revised) above mean sea level (general adjustment of 1929).
Drainage area.- 6,796 square miles.
Records available.- February 1913 to September 1936.
Average discharge.- 23 years, 11,440 second-feet, corrected for diversions and storage.
Extremes.- Maximum discharge during year, 227,000 second-feet Mar. 19 (gage height, 16.66 feet); minimum, 1,850 second-feet Sept. 30 (gage height, -0.08 foot). Flow in canals not included.
1913-36: Maximum discharge, that of Mar. 19, 1936; minimum, 1,220 second-feet Sept. 18, 1932. Flow in canals not included.
Remarks.- Records good except those for periods of ice effect, Dec. 23 to Jan. 6, Jan. 20 to Mar. 10, which are fair, and are based on records for station at Riegelsville. Part of table of monthly discharge corrected for diversions in Trenton Power Race and Delaware & Raritan Canal, and for effect of storage on Wallenpaupack Creek, on Mongaup River, and in Lake Hopatcong. Trenton Power Race at station abandoned Nov. 15, 1935; no diversion thereafter.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,040	47,400	44,100	7,000	8,800	14,500	27,500	11,300	5,460	4,890	2,970	4,150
2	2,700	32,000	33,500	7,000	8,000	13,500	25,700	12,200	4,890	5,080	2,940	4,530
3	3,290	20,800	26,600	13,000	8,000	12,800	24,800	11,600	5,080	4,890	2,850	4,530
4	3,220	15,600	23,000	17,000	7,600	13,400	24,800	12,200	5,460	4,360	2,380	3,710
5	3,350	12,800	18,700	23,000	7,800	14,500	22,100	11,600	5,650	4,530	2,090	3,350
6	3,380	11,300	16,000	20,000	7,600	14,500	32,800	11,300	5,260	4,110	2,440	3,100
7	3,290	9,460	14,200	19,100	7,200	14,000	52,000	10,700	4,890	4,040	2,850	2,790
8	2,820	10,400	12,900	17,100	6,700	14,000	50,800	10,100	4,530	3,510	2,790	2,640
9	2,550	10,700	12,800	19,700	7,100	14,700	40,800	9,460	4,110	3,980	2,820	2,500
10	3,040	10,400	13,800	26,600	6,900	18,400	36,600	8,860	3,870	3,580	2,820	2,520
11	2,940	9,770	14,600	20,300	6,300	39,600	35,500	9,150	4,530	3,910	2,500	3,000
12	2,850	8,860	15,200	16,700	6,300	124,000	34,500	8,280	5,080	4,530	2,500	3,350
13	2,500	9,150	13,800	15,600	6,900	187,000	33,500	8,560	9,720	4,110	3,100	3,320
14	2,440	23,100	12,500	15,200	6,700	107,000	34,500	8,280	8,280	3,680	3,320	3,220
15	2,170	46,300	12,200	14,600	6,900	64,800	36,600	10,100	6,280	3,190	3,190	2,700
16	2,170	31,500	13,800	20,300	7,100	52,000	33,500	9,770	5,860	3,680	3,680	2,220
17	2,580	27,500	15,200	20,800	7,100	58,400	30,500	8,560	5,650	3,510	3,610	2,500
18	2,820	31,500	15,200	19,100	6,800	139,000	27,500	7,740	6,060	3,480	2,760	3,040
19	2,520	25,700	13,800	17,900	6,500	214,000	23,900	7,220	11,000	3,290	2,470	2,880
20	2,360	22,100	12,500	13,500	6,400	168,000	21,200	8,000	13,800	3,130	2,380	2,440
21	2,380	22,100	11,600	11,000	6,400	104,000	19,500	9,150	14,200	2,730	2,250	2,880
22	2,300	24,800	10,100	12,000	6,400	86,000	18,300	8,280	13,500	2,360	2,470	2,520
23	2,120	23,000	9,000	11,300	6,300	74,200	17,900	7,470	10,400	2,790	2,760	2,220
24	2,330	20,300	8,000	9,200	5,900	54,500	17,500	6,970	8,860	3,190	3,120	2,580
25	2,790	17,500	7,600	10,500	5,700	44,100	15,200	6,500	7,740	3,540	6,970	2,440
26	2,610	15,200	8,500	11,500	6,800	38,700	14,200	6,060	6,970	3,810	7,220	2,360
27	2,410	14,200	7,000	10,300	11,200	35,500	12,800	6,500	6,280	3,320	5,650	2,300
28	2,300	13,800	6,800	9,000	14,100	39,700	12,500	6,500	5,860	2,850	4,530	2,170
29	2,170	33,200	7,000	9,800	14,400	43,000	11,900	6,500	5,650	2,550	4,180	1,940
30	4,040	52,000	6,400	10,000		36,600	11,600	6,060	5,260	2,790	3,810	1,920
31	18,500		6,400	9,400		31,500		5,860		3,000	3,910	
Month	Observed							Corrected for diversion				
	Maximum	Minimum	Mean	Mean	Per square mile	Run-off in inches						
October.....	18,500	2,120	3,225									
November.....	52,000	8,860	21,750									
December.....	44,100	6,400	14,280									
January.....	26,600	7,000	14,760									
February.....	14,400	5,700	7,583									
March.....	214,000	12,800	60,840									
April.....	52,000	11,600	26,680									
May.....	12,200	5,860	8,736									
June.....	14,200	3,870	7,006									
July.....	5,080	2,360	3,626									
August.....	7,220	2,090	3,333									
September.....	4,530	1,920	2,861									
The year.....	214,000	1,920	14,590									
				14,610	2.15	29.25						

Lackawaxen River at West Hawley, Pa.

Location. - Chain gage, lat. $41^{\circ}28'10''$, long. $75^{\circ}11'15''$, at Riverside Bridge, at West Hawley, Wayne County, half a mile above mouth of Middle Creek. Zero of gage is 885.50 feet above mean sea level.
Drainage area. - 206 square miles.
Records available. - October 1931 to September 1936 in reports of U. S. Geological Survey; May 1921 to September 1936 in reports of Pennsylvania Department of Forests and Waters.
Average discharge. - 12 years (1924-36), 354 second-feet.
Extremes. - Maximum discharge during year, 14,000 second-feet Mar. 18 (gage height, 15.32 feet, from floodmarks) from rating curve extended above 3,000 second-feet minimum, 16 second-feet Aug. 3, 9 (gage height, 0.82 foot).
1921-36: Maximum discharge, that of Mar. 18, 1936; minimum, 15 second-feet Sept. 2, 3, 1929 (gage height, 0.74 foot).
Remarks. - Records poor. Discharge for periods of ice effect, Dec. 23 to Jan. 4, Jan. 15 to Mar. 11, determined from gage heights, weather records, and discharge measurement. Discharge for high stages determined from graphs based on twice daily gage readings. Regulation at low stages from operation of mills upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	1,440	785	200	135	150	592	271	55	61	26	103
2	60	730	648	225	133	145	702	224	53	61	28	85
3	53	565	441	270	135	135	840	201	66	55	19	69
4	43	401	401	380	139	145	565	231	53	49	26	69
5	38	321	340	515	137	175	490	170	53	40	26	61
6	38	340	284	491	135	160	1,270	153	49	46	40	50
7	34	340	266	380	135	145	1,200	146	28	50	56	50
8	37	401	284	340	135	130	1,020	148	50	49	31	43
9	35	340	360	302	135	175	840	128	63	47	16	42
10	35	284	444	284	135	380	900	125	58	49	26	47
11	41	266	444	302	135	2,930	1,080	118	55	42	37	45
12	38	263	401	302	135	7,100	1,140	101	50	27	50	43
13	33	1,730	321	321	138	3,370	1,020	93	46	26	40	20
14	34	2,570	321	284	145	1,860	340	112	47	34	40	40
15	33	1,140	444	265	153	1,720	840	97	50	35	38	52
16	35	730	620	250	148	2,830	785	91	49	36	31	49
17	37	441	515	225	142	6,000	620	83	50	32	24	49
18	41	675	401	215	137	10,900	565	32	78	30	26	50
19	44	675	340	205	130	5,730	515	118	911	26	28	34
20	37	840	302	195	129	3,890	442	121	534	17	29	22
21	38	900	259	190	131	2,870	465	118	234	23	32	36
22	41	785	214	180	135	2,820	592	101	173	26	42	43
23	40	620	205	175	143	1,880	465	87	130	26	231	31
24	38	467	195	165	149	1,340	373	74	128	23	490	35
25	41	401	185	160	153	1,140	330	78	114	25	178	38
26	43	401	180	155	158	1,010	290	63	61	20	116	40
27	37	401	175	150	160	1,060	252	66	80	17	89	29
28	38	738	180	145	158	1,510	238	66	78	22	80	38
29	37	2,050	185	145	155	1,040	224	59	85	26	135	36
30	1,680	1,270	190	140		969	217	59	80	24	146	38
31	2,780		195	135		1,300		61		26	107	
Month					Maximum	Minimum	Mean	Per square mile		Run-off in inches		
October					2,780	33	182		0.379		1.01	
November					2,570	263	751		3.65		4.07	
December					785	175	340		1.65		1.90	
January					515	135	248		1.20		1.38	
February					160	129	141		.694		.74	
March					10,900	130	2,097		10.2		11.76	
April					1,270	217	657		3.19		3.56	
May					271	59	118		.573		.66	
June					911	28	112		.544		.61	
July					61	17	34.3		.169		.19	
August					490	16	73.6		.357		.41	
September					103	22	46.5		.226		.25	
The year					10,900	16	401		1.95		26.54	

DELAWARE RIVER BASIN

Wallenpaupack Creek at Wilsonville, Pa.

Location. - At hydroelectric plant of Pennsylvania Power & Light Co. with dam, lat. $41^{\circ}27'35''$, long. $75^{\circ}11'5''$, at Wilsonville, Wayne County, 1½ miles south of Hawley.

Drainage area. - 228 square miles.

Records available. - October 1918 to September 1921, June 1926 to September 1936 in reports of U. S. Geological Survey; July 1908 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 20 years (1913-22, 1925-36), 377 second-feet, corrected for storage.

Remarks. - Records good. Flow computed from output of generators. No discharge over spillway during year except an estimated total of 38 million cubic feet for the period Mar. 20-26. Daily discharge not corrected for storage. No corrections made for evaporation from Lake Wallenpaupack. Discharge measurements, records of powerplant operations, and water-surface elevation in lake and tailrace furnished by Pennsylvania Power & Light Co.

DELAWARE RIVER BASIN

Bushkill Creek at Shoemakers, Pa.

Location. - Chain gage, lat. $41^{\circ}5'15''$, long. $75^{\circ}2'20''$, at highway bridge three-quarters of a mile northwest of Shoemakers, Monroe County, and 2 miles southwest of Bushkill. Zero of gage is 421.13 feet above mean sea level.

Drainage area. - 117 square miles.

Records available. - October 1918 to September 1920, October 1931 to September 1936 in reports of U. S. Geological Survey; September 1908 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 24 years (1908-16, 1920-36), 235 second-feet.

Extremes. - Maximum discharge observed during year, 3,630 second-feet Mar. 18 (gage height, 6.92 feet) from rating curve extended above 1,600 second-feet; minimum, 8.0 second-feet Sept. 28, 29 (gage height, 0.98 foot).

1908-36: Maximum discharge, 3,910 second-feet July 24, 1920 (gage height, 7.2 feet, from graph based on gage readings) from rating curve extended above 1,600 second-feet; minimum, 4 second-feet Sept. 21, 26, 1932 (gage height, 0.90 foot).

Remarks. - Records fair except those for periods of ice effect, Dec. 23 to Jan. 2, Jan. 21 to Mar. 11, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for station on McMichaels Creek at Stroudsburg. Discharge for high stages determined from graphs based on twice-daily gage readings. Some regulation at low stages from operation of mills upstream.

Daily and monthly discharge, in second-feet, 1935-36.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.										
1	599	130	83	0	235	44	1,710	183	777	187	104	244										
2	710	197	264	316	56	734	1,740	103	925	446	46	0										
3	725	0	247	322	429	432	1,670	54	1,060	408	818	8.1										
4	665	519	221	297	324	492	692	579	954	0	805	0										
5	233	93	223	0	313	591	260	552	943	0	792	0										
6	200	105	192	275	155	156	1,180	481	275	586	960	0										
7	680	322	212	277	467	80	1,600	421	0	284	772	0										
8	567	222	86	522	357	6.2	987	374	950	695	233	601										
9	469	302	221	720	125	21	1,100	381	926	872	68	744										
10	296	92	238	279	489	168	1,110	17	869	892	521	719										
11	81	229	204	214	515	350	1,040	550	953	714	837	729										
12	199	613	208	30	506	418	350	542	933	221	623	234										
13	18	222	219	540	508	213	989	646	36	829	734	12										
14	794	171	84	439	460	42	1,120	498	0	843	750	397										
15	751	158	31	804	332	0	1,100	270	98	865	0	334										
16	448	119	200	269	57	194	954	114	661	767	0	213										
17	345	0	150	276	420	367	876	7.5	289	556	211	0										
18	443	217	129	412	558	1,080	1,010	285	431	0	0	533										
19	163	158	167	260	428	1,680	184	435	377	14	303	64										
20	117	155	233	497	501	1,780	261	184	173	834	585	0										
21	457	148	224	576	515	1,790	640	87	0	829	173	585										
22	772	163	49	607	97	1,790	708	320	446	924	390	277										
23	551	260	376	945	6.5	1,800	383	0	335	877	0	279										
24	375	4.9	289	866	518	1,820	329	0	253	763	519	288										
25	190	204	0	197	511	1,820	124	520	141	222	503	82										
26	0	391	291	60	822	1,820	20	451	144	78	143	0										
27	0	232	955	962	856	1,750	388	409	596	665	136	0										
28	11	0	749	967	497	1,740	459	470	47	806	0	161										
29	194	141	390	391	182	1,680	212	326	269	827	0	680										
30	51	388	616	649	1,720	532	0	527	820	0	164	0										
31	200	222	416	1,720	0			812	340													
Observed																						
Month																						
Maximum		Minimum		Mean		Mean		Per square mile		Run-off in inches												
The year.....																						
442																						
396																						
1.74																						
23.67																						

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	660	942	190	168	138	510	326	112	161	29	41
2	44	540	750	250	165	140	480	241	101	139	27	36
3	56	452	630	750	164	142	452	241	97	129	25	42
4	54	348	540	570	165	143	400	279	149	119	25	35
5	46	296	480	452	167	145	392	252	105	114	23	30
6	51	248	400	370	168	150	1,020	230	89	101	27	27
7	48	227	348	317	170	155	975	216	83	91	29	23
8	43	227	326	287	175	165	845	203	81	85	26	21
9	41	203	359	326	177	185	720	181	62	80	23	19
10	38	184	352	352	175	250	720	178	69	74	21	19
11	34	175	334	375	170	500	720	164	85	69	71	17
12	34	166	304	357	165	2,580	660					

DELAWARE RIVER BASIN

McMichaels Creek at Stroudsburg, Pa.

Location.—Chain gage, lat. $40^{\circ}58'40''$, long. $75^{\circ}12'30''$, at railroad bridge at Wilkes-Barre and Eastern Railroad car shops three-quarters of a mile southwest of Stroudsburg, Monroe County. Zero of gage is 403.92 feet above mean sea level.

Drainage area.—64.4 square miles.

Records available.—October 1920 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; August 1911 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—23 years (1911-18, 1920-36), 120 second-feet.

Extremes.—Maximum discharge during year, 4,670 second-feet Mar. 12 (gage height, 10.5 feet, from floodmarks) from rating curve extended above 800 second-feet; minimum, 12 second-feet Sept. 13 (gage height, 2.54 feet).

1911-36: Maximum discharge, that of Mar. 12, 1936; minimum, 7.2 second-feet Nov. 30, 1930 (gage height, 2.34 feet); minimum daily discharge, 9.0 second-feet Nov. 30, 1930.

Remarks.—Records fair except those for extremely high stage and for periods of ice effect, which are poor. Discharge for periods of ice effect, Dec. 19 to Jan. 2, Jan. 18 to Mar. 8, determined from gage heights, weather records, one discharge measurement, and by comparison with records for station on Bushkill Creek at Shoemakers. Discharge for high stages determined from graphs based on twice-daily gage readings. Regulation at low stages from operation of power plants upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	274	444	77	90	64	258	117	42	42	21	23
2	43	106	372	100	90	70	265	100	42	35	19	25
3	40	132	304	669	91	77	246	98	41	29	21	21
4	39	110	256	375	92	83	200	98	46	31	22	24
5	39	106	218	277	93	90	212	82	42	33	16	17
6	74	95	197	165	94	100	1,110	76	39	31	19	16
7	40	90	166	164	96	110	631	71	38	28	21	20
8	39	97	166	144	97	125	481	72	35	27	19	18
9	35	78	136	236	92	147	389	68	38	28	17	22
10	36	74	161	407	88	233	462	62	36	27	21	20
11	31	74	148	255	85	1,590	407	62	34	36	32	16
12	38	76	132	224	83	3,430	354	64	50	29	25	14
13	34	206	123	206	32	1,500	354	65	68	26	24	14
14	35	169	130	197	83	832	287	80	61	30	21	18
15	35	137	121	180	82	638	265	61	46	26	20	16
16	31	132	169	425	80	607	261	57	42	25	23	18
17	35	183	200	255	73	1,570	221	55	35	23	26	18
18	41	337	110	215	67	2,740	200	54	48	24	18	16
19	32	274	100	180	62	2,050	185	71	123	22	15	16
20	26	337	92	165	58	1,320	172	67	55	25	17	13
21	30	320	85	145	55	1,250	158	57	46	24	16	21
22	32	320	79	135	52	793	158	52	38	24	21	18
23	32	304	74	130	48	598	139	52	38	23	27	15
24	36	249	70	123	51	523	128	50	35	35	136	20
25	33	224	67	117	52	449	117	49	38	31	32	21
26	31	200	65	110	53	369	115	47	36	27	26	16
27	28	194	63	105	54	481	106	61	53	23	26	14
28	33	239	62	102	56	437	100	53	36	26	22	16
29	48	796	63	97	58	346	100	46	35	23	26	15
30	386	579	65	94	323	111	47	35	19	36	36	21
31	646	69	92	294		44		18	26			

Month			Maximum	Minimum	Mean	Per square mile	Run-off in inches
October			646	26	67.4	1.05	1.21
November			796	74	220	3.42	3.82
December			444	62	147	2.29	2.63
January			669	77	199	3.09	3.56
February			97	48	74.4	1.15	1.24
March			3,430	64	749	11.6	13.37
April			1,110	100	273	4.24	4.73
May			117	44	65.7	1.02	1.18
June			128	33	44.5	.691	.77
July			42	18	27.4	.425	.49
August			136	15	26.2	.407	.47
September			25	13	18.1	.281	.31
The year			3,430	13	160	2.48	33.78

DELAWARE RIVER BASIN

Lehigh River at Tannery, Pa.

Location.—Water-stage recorder, lat. $41^{\circ}2'25''$, long. $75^{\circ}45'50''$, 600 feet above highway bridge at Tannery, Carbon County, and $\frac{1}{4}$ miles above mouth of Black Creek. Zero of gage is 1,041.98 feet above mean sea level.

Drainage area.—322 square miles.

Records available.—October 1919 to September 1921, October 1928 to September 1936 in reports of U. S. Geological Survey; June 1914 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—17 years (1914-15, 1919-26, 1927-36), 675 second-feet.

Extremes.—Maximum discharge during year, 21,800 second-feet Mar. 12 (gage height, 13.34 feet); minimum, 0.9 second-foot Sept. 28 (gage height, 1.07 feet); minimum daily discharge, 7.2 second-feet Aug. 5.

1914-36: Maximum discharge, that of Mar. 12, 1936; minimum, that of Sept. 28, 1936; minimum daily discharge, that of Aug. 5, 1936.

Remarks.—Records fair except those for periods of ice effect or plugged intake, which are poor. Discharge for period of ice effect, Dec. 22 to Mar. 10, determined from gage heights, weather records, one discharge measurement, and by comparison with records for station at Bethlehem. Discharge for period of plugged intake, Apr. 1-25, determined by comparison with records for station at Bethlehem. Regulation from operation of power plants upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	163	1,460	1,900	465	360	800	1,050	659	275	224	72	75
2	163	913	1,460	500	350	700	1,160	502	252	203	39	48
3	170	643	1,190	1,800	350	700	1,000	460	229	182	31	53
4	170	495	983	1,300	340	750	900	527	220	199	80	72
5	156	414	956	1,050	340	800	1,100	490	207	182	7.2	41
6	118	376	784	920	330	650	2,000	448	136	174	72	33
7	143	345	752	830	320	600	1,590	414	174	167	76	47
8	129	345	678	760	320	565	1,400	391	167	155	26	46
9	124	334	768	730	310	539	1,300	369	167	147	73	44
10	121	310	912	860	300	892						

DELAWARE RIVER BASIN

Lehigh River at Bethlehem, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}22'5''$, long. $75^{\circ}21'55''$, 1,500 feet above Minisink Trail Bridge, at Bethlehem, Northampton County, and 2,000 feet below mouth of Monocacy Creek. Zero of gage is 208.50 feet above mean sea level.

Drainage area. - 1,280 square miles.

Records available. - September 1902 to February 1905, April 1909 to December 1913, October 1918 to September 1921, October 1928 to September 1936 in reports of U. S. Geological Survey; September 1902 to February 1905, April 1909 to September 1936 in reports of Pennsylvania Department of Forests and Waters. Records prior to October 1928 obtained at New Street Bridge 2,800 feet upstream.

Extremes. - Maximum discharge during year, 55,700 second-feet Mar. 12 (gage height, 17.04 feet); minimum, 335 second-feet Sept. 13 (gage height, 2.00 feet); minimum daily discharge, 399 second-feet Sept. 27.

1902-5, 1909-36: Maximum discharge, 64,800 second-feet Aug. 24, 1933 (gage height, 18.70 feet); minimum, 160 second-feet Oct. 15, 1910 (gage height, 1.33 feet, former site and datum).

Maximum stage known, 25.9 feet, former site and datum, Feb. 28, 1902 (discharge, about 92,000 second-feet).

Extremes do not include flow of Lehigh Canal.

Remarks. - Records fair. Discharge for period of ice effect, Dec. 25 to Jan. 2, determined from stage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Regulation from power operations upstream. Daily and monthly records include flow of Lehigh Canal.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	730	3,960	7,660	1,210	1,640	4,310	4,590	2,190	1,140	1,060	559	650
2	761	2,560	6,130	1,270	1,520	3,910	4,740	2,110	1,080	966	526	622
3	741	1,910	5,030	5,660	1,570	3,290	4,590	2,000	1,060	889	570	611
4	720	1,630	4,450	6,360	1,570	3,110	4,040	2,170	1,080	834	544	585
5	700	1,430	3,660	4,450	1,610	3,910	5,660	1,930	999	845	523	533
6	680	1,300	3,410	3,780	1,510	3,910	10,600	1,800	944	845	568	538
7	735	1,190	2,980	3,180	1,450	3,410	13,200	1,700	889	780	542	517
8	657	1,170	2,740	2,820	1,370	3,360	9,750	1,660	911	748	508	530
9	660	1,140	2,940	4,020	1,370	3,370	8,000	1,580	878	696	525	552
10	626	1,050	2,910	6,980	1,370	6,270	7,470	1,520	856	716	569	541
11	650	1,060	2,800	4,740	1,290	16,100	7,470	1,460	966	706	618	507
12	632	1,120	2,610	3,910	1,270	43,500	6,950	1,420	1,250	758	620	489
13	614	1,750	2,340	3,660	1,280	26,700	6,450	1,440	1,450	746	601	438
14	653	4,030	2,390	3,410	1,300	15,500	5,640	1,620	1,370	706	600	543
15	632	3,140	2,510	3,410	1,410	11,600	5,030	1,480	1,210	685	656	500
16	598	2,640	3,110	5,960	1,430	10,200	4,740	1,340	1,080	656	597	492
17	598	3,700	2,950	4,590	1,410	15,500	4,310	1,290	977	638	640	508
18	598	6,980	2,690	3,910	1,470	38,000	3,910	1,300	1,130	618	579	491
19	589	5,050	2,610	3,530	1,360	30,000	3,660	1,420	2,350	600	534	481
20	551	4,610	2,410	2,410	1,230	21,500	3,410	1,750	1,700	666	552	462
21	616	5,050	2,030	2,860	1,180	17,500	3,150	1,560	1,350	618	530	529
22	580	4,610	1,690	2,820	1,200	15,200	3,170	1,370	1,290	600	496	477
23	627	4,070	2,030	2,440	1,180	11,800	2,890	1,280	1,180	590	513	494
24	622	3,430	1,790	2,060	1,150	9,760	2,620	1,250	1,170	734	2,100	494
25	595	3,040	1,540	2,040	1,230	8,390	2,470	1,240	1,240	759	1,280	486
26	575	2,300	1,440	2,080	1,760	6,980	2,330	1,210	1,120	609	885	454
27	556	2,590	1,360	2,040	3,870	7,090	2,230	1,350	999	576	761	423
28	602	3,090	1,290	1,840	4,590	7,640	2,150	1,410	999	639	690	496
29	595	11,600	1,240	1,840	4,180	6,390	2,040	1,260	977	640	765	496
30	1,750	10,300	1,220	1,810	5,740	2,020	1,170	944	621	881	515	
31	3,970	1,200	1,750		5,160		1,150		580	728		
Month				Maximum	Minimum	Mean	Per square mile	Run-off in inches				
October	3,970	551	781	0.610	0.70							
November	11,600	1,050	3,400	2.66	2.97							
December	7,660	1,200	2,737	2.14	2.47							
January	6,980	1,210	3,317	2.59	2.99							
February	4,590	1,150	1,682	1.31	1.41							
March	43,500	3,110	11,920	9.31	10.73							
April	13,200	2,020	4,909	3.84	4.28							
May	2,190	1,150	1,530	1.20	1.38							
June	2,350	856	1,153	.901	1.00							
July	1,060	576	714	.558	.6							
August	2,100	496	679	.530	.6							
September	650	423	515	.402	.4							
The year	43,500	423	2,787	2.18	29.63							

DELAWARE RIVER BASIN

Tohickon Creek near Pipersville, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}26'0''$, long. $75^{\circ}7'0''$, at highway bridge $\frac{1}{2}$ miles northeast of Pipersville, Bucks County, and $4\frac{1}{2}$ miles above mouth.

Zero of gage is 258.43 feet above mean sea level.

Drainage area. - 97.4 square miles.

Records available. - July 1935 to September 1936.

Extremes. - Maximum discharge during year, 7,020 second-feet June 13 (gage height, 7.60 feet) from rating curve extended above 3,600 second-feet; minimum, 0.6 second-foot Aug. 3 (gage height, 0.58 foot).

1935-36: Maximum discharge, that of June 13, 1936; minimum, that of Aug. 3, 1936.

Remarks. - Records good except those for periods of ice effect, Dec. 21 to Jan. 3, Jan. 20 to Mar. 11, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Regulation at low stages from operation of mills upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.3	656	209	26	32	1,300	99	25	9.6	16	0.9	6.5
2	6.4	239	150	28	30	950	104	24	4.4	17	.8	5.3
3	7.4	135	116	3,000	29	750	168	22	5.1	16	3.3	5.5
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DELAWARE RIVER BASIN

Neshaminy Creek near Langhorne, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}10'25''$, long. $74^{\circ}57'30''$, at bridge on State Highway 213, half a mile below mouth of Mill Creek, and 1.7 miles west of Langhorne, Bucks County. Zero of gage is 40.57 feet above mean sea level.

Drainage area. - 210 square miles.

Records available. - October 1934 to September 1936.

Extremes. - Maximum discharge during year, 9,520 second-feet Jan. 3 (gage height, 12.53 feet) from rating curve extended above 3,000 second-feet; minimum, 8.1 second-foot Sept. 18 (gage height, 0.63 foot); minimum daily discharge, 13 second-feet Sept. 17.

1934-36: Maximum discharge, that of Jan. 3, 1936; minimum, that of Sept. 18, 1936; minimum daily discharge, that of Sept. 17, 1936.

Maximum stage known, 17.3 feet, from floodmarks, Aug. 23, 1933 (discharge not determined).

Remarks. - Records good except those for extremely high stages and those for periods of ice effect, which are fair. Discharge for periods of ice effect, Dec. 22 to Jan. 2, Jan. 24 to Mar. 4, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Regulation from power operations upstream.

DELAWARE RIVER BASIN

Schuylkill River at Pottstown, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}14'30''$, long. $75^{\circ}39'5''$, at Hanover Street Bridge, at Pottstown, Montgomery County, one-third of a mile below mouth of Manatawny Creek. Zero of gage is 117.81 feet above mean sea level.

Drainage area. - 1,147 square miles.

Records available. - October 1931 to September 1936 in reports of U. S. Geological Survey; August 1927 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes. - Maximum discharge during year, 31,800 second-feet Mar. 12 (gage height, 15.13 feet) from rating curve extended above 15,000 second-feet; minimum, 303 second-feet Sept. 23; minimum daily discharge, 349 second-feet Sept. 28.

1927-36: Maximum discharge, 44,200 second-feet Aug. 24, 1933 (gage height 19.2 feet) from rating curve extended above 15,000 second-feet; minimum, 87 second-feet Aug. 13 1930 (gage height, 0.43 foot); minimum daily discharge, 175 second-feet Sept. 19, 1932.

Remarks. - Records good except those for periods of ice effect, Dec. 23 to Jan. 2, Jan. 21 to Feb. 26, which are poor and were determined from gage heights, weather records, and by comparison with records for station at Philadelphia. Discharge for period of no gage record, Sept. 15-18, determined by comparison with records for station at Philadelphia. Regulation at low stages from operation of mills upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	372	339	122	112	2,000	335	123	60	39	18	32
2	47	184	290	130	110	1,300	335	120	54	40	15	41
3	45	129	255	6,430	110	1,100	391	119	55	34	14	27
4	44	108	224	1,240	115	1,300	310	883	49	.31	15	27
5	42	98	176	635	130	1,600	262	298	48	28	14	23
6	42	91	190	468	120	1,170	2,220	185	45	25	15	20
7	50	89	159	360	115	668	929	152	41	22	17	19
8	52	100	182	347	110	531	575	137	45	23	15	21
9	58	100	223	3,090	105	630	428	123	41	21	15	18
10	46	84	275	2,180	100	912	684	112	43	21	15	17
11	43	84	245	615	96	3,520	808	106	40	21	15	14
12	47	105	340	461	92	3,860	616	101	48	41	14	14
13	35	158	217	428	90	1,250	585	156	92	125	14	14
14	31	127	213	461	88	665	451	201	176	54	33	15
15	55	103	247	564	90	525	369	131	86	39	40	18
16	43	91	520	1,130	100	451	347	104	64	30	58	15
17	35	2,470	306	493	115	442	298	93	49	27	215	13
18	34	2,100	232	418	135	3,670	266	88	66	24	75	29
19	22	947	209	475	170	1,170	247	93	114	16	49	61
20	23	495	195	762	155	898	228	120	124	21	20	43
21	41	382	162	1,070	145	1,350	213	107	63	23	15	48
22	39	310	175	518	140	1,240	195	84	46	20	15	33
23	41	266	165	264	138	585	182	74	40	23	14	27
24	39	239	155	220	135	495	168	72	39	26	57	25
25	42	220	150	190	135	451	159	72	43	28	86	19
26	44	217	145	170	160	382	152	63	38	20	351	17
27	38	195	140	150	1,500	827	146	71	35	22	116	15
28	39	212	135	140	3,400	1,590	140	86	34	23	51	14
29	39	1,730	130	150	2,100	629	137	74	40	18	227	17
30	646	512	128	120	461	131	67	40	18	152	18	
31	804	125	115	391	60				15	79		

Month			Maximum	Minimum	Mean	Per square mile	Run-off in inches
October			804	22	85.6	0.408	0.47
November			2,470	84	411	1.96	2.19
December			520	125	214	1.02	1.18
January			6,430	115	771	3.67	4.23
February			3,400	88	349	1.66	1.79
March			3,860	382	1,163	5.54	6.39
April			2,220	131	410	1.95	2.18
May			883	60	138	.657	.76
June			176	34	58.6	.279	.31
July			411	15	41.5	.198	.23
August			351	14	59.6	.284	.33
September			61	13	23.8	.113	.13
The year			6,430	13	311	1.48	20.19

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	500	761	3,630	1,700	1,950	5,270	3,620	1,880	831	871	428	640
2	487	605	2,950	2,400	1,850	4,720	3,540	1,880	815	847	416	684
3	528	528	2,460	9,170	1,750	4,120	3,620	2,000	799	776	378	768
4	480	480	2,130	7,600	1,750	4,370	3,000	2,410	895	839	416	768
5	468	461	1,760	4,720	1,820	5,080	2,700	2,480	823	784	428	722
6	448	435	1,640	3,710	1,790	4,900	9,350	2,340	745	706	441	568
7	468	448	1,460	3,020	1,780	4,280	11,900	2,270	699	676	441	447
8	468	448	1,440	2,670	1,600	4,000	7,690	2,140	714	654	416	473
9	448	442	1,700	4,110	1,500	4,420	5,840	2,000	729	618	384	500
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DELAWARE RIVER BASIN

Schuylkill River at Philadelphia, Pa.

Location. - Water-stage recorder, lat. $39^{\circ}58'0''$, long. $75^{\circ}11'20''$, just above Fairmount Dam, at Philadelphia, Philadelphia County. Zero of gage is at 0.00 foot elevation, city of Philadelphia datum, or 5.23 feet above mean sea level, Sandy Hook datum.

Drainage area. - 1,893 square miles.

Records available. - January 1898 to December 1912, September 1931 to September 1936 in reports of U. S. Geological Survey; January 1903 to December 1912, September 1931 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 14 years (1903-12, 1931-36), 2,574 second-feet.

Extremes. - Maximum discharge during year, 48,400 second-feet Mar. 12 (gage height, 11.62 feet) from rating curve extended above 21,000 second-feet; minimum, 9.0 second-feet July 20 (gage height, 5.47 feet); minimum daily discharge, 97 second-feet Sept. 27.

1898-1912, 1931-36: Maximum gage height, about 14.8 feet Mar. 1, 1902 (discharge not determined); no flow over dam at times; minimum daily discharge, 38 second-feet Sept. 20, 1932.

Maximum stage known, about 17.0 feet Oct. 4, 1869 (discharge not determined). Remarks. - Records good except those for extremely high stages, which are fair. Regulation from storage reservoirs upstream. Water supply for city of Philadelphia diverted above station not included in records except in part of monthly table. Record of diversion furnished by city of Philadelphia.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	486	3,040	5,910	1,360	1,970	11,200	5,590	2,210	816	831	316	596
2	554	1,430	4,780	1,630	1,870	10,300	5,240	2,180	750	770	254	390
3	526	899	3,990	22,600	1,750	7,940	5,580	2,260	684	708	260	402
4	518	758	3,320	17,400	1,730	8,080	4,950	3,290	654	693	232	488
5	464	594	2,780	8,960	1,780	9,280	4,160	3,000	798	692	222	410
6	485	651	2,370	7,380	1,760	9,030	13,100	2,890	641	651	272	445
7	500	600	2,160	6,820	1,780	7,360	17,600	2,630	545	570	300	355
8	496	632	2,020	7,540	1,600	6,240	11,200	2,470	594	502	281	212
9	493	562	2,420	9,040	1,520	6,570	8,350	2,310	582	462	240	234
10	434	478	2,840	15,300	1,470	8,710	8,700	1,970	546	433	212	234
11	509	588	2,730	8,410	1,430	19,100	8,440	1,690	584	468	217	177
12	534	597	3,220	6,440	1,300	40,300	7,660	1,470	949	788	226	173
13	414	797	2,420	5,940	1,300	34,200	7,240	1,260	4,670	596	260	162
14	452	1,690	2,260	5,470	1,390	17,300	6,580	1,560	4,130	526	200	156
15	462	1,780	2,750	4,780	1,470	11,600	5,760	1,520	2,340	429	154	122
16	434	1,300	4,490	7,610	1,920	9,330	5,410	1,300	1,390	374	184	140
17	428	10,900	4,100	6,400	2,310	9,250	5,010	1,190	899	342	435	131
18	388	19,300	3,490	5,360	2,380	28,200	4,490	1,160	898	333	412	186
19	340	9,160	3,160	5,700	2,460	26,900	4,160	1,160	2,400	326	278	309
20	334	6,820	2,950	4,580	2,140	19,500	3,880	1,270	2,700	298	190	176
21	426	5,590	2,520	3,860	1,830	17,000	3,600	1,390	1,520	370	153	150
22	396	4,720	1,730	4,210	1,690	16,900	3,440	1,160	1,140	298	341	125
23	418	3,880	1,590	3,110	1,560	11,600	3,320	1,050	818	244	1,010	128
24	464	3,270	1,780	2,730	1,560	9,690	3,000	940	875	371	1,020	117
25	403	2,780	1,600	2,050	1,620	8,430	2,840	946	1,050	463	562	101
26	382	2,370	1,430	2,310	3,550	7,280	2,630	856	1,080	494	1,300	113
27	368	2,160	1,060	2,520	7,690	8,180	2,630	878	838	415	1,280	97
28	411	2,070	1,140	2,110	10,200	12,200	2,420	1,120	758	560	726	120
29	374	10,100	1,090	2,020	9,800	8,170	2,420	1,180	782	531	1,530	115
30	2,120	8,080	1,120	2,160	6,820	2,310	943	782	400	1,610	100	100
31	5,980	1,250	2,160	3,228	2,222	2,56	478	.253	385	1,110	24.94	

Month	Observed			Diversion	Corrected for diversion		
	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	5,880	334	674	232	906	0.479	0.55
November	19,300	478	3,587	225	3,812	2.01	2.24
December	5,910	1,060	2,598	232	2,830	1.49	1.72
January	22,600	1,360	6,063	236	6,299	3.35	3.84
February	10,200	1,300	2,580	253	2,833	1.50	1.62
March	40,300	6,240	13,320	232	13,550	7.16	8.26
April	17,600	2,310	5,724	235	5,957	3.15	3.51
May	3,290	792	1,614	242	1,856	.980	1.13
June	4,670	545	1,242	241	1,483	.783	.87
July	831	244	494	254	748	.395	.46
August	1,610	153	509	250	759	.401	.46
September	596	97	222	256	478	.253	.28
The year	40,300	97	3,228	240	3,468	1.83	24.94

DELAWARE RIVER BASIN

Little Schuylkill River at Tamaqua, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}48'20''$, long. $75^{\circ}58'20''$, at Panther Valley Water Co. pumping plant, 0.6 mile above Tamaqua, Schuylkill County, and 0.8 mile above mouth of Panther Creek. Zero of gage is 817.46 feet above mean sea level.

Drainage area. - 42.9 square miles.

Records available. - October 1919 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; June 1916 to September 1936 in reports of Pennsylvania Department of Forests and Waters. Records prior to Oct. 1, 1928, obtained at a site 0.6 mile downstream.

Average discharge. - 18 years (1916-17, 1919-36), 93.3 second-feet.

Extremes. - Maximum discharge during year, 1,940 second-feet Mar. 18 (gage height, 5.65 feet); minimum, 6.9 second-feet Aug. 14 (gage height, 1.33 feet). 1916-36: Maximum discharge, 3,740 second-feet Aug. 24, 1933 (gage height, 7.50 feet); minimum, 1.8 second-feet Dec. 18, 1930 (gage height, 1.21 feet); minimum daily discharge, 3.0 second-feet Dec. 23, 1930.

Remarks. - Records good except those for periods of ice effect and for period of plugged intake, which are poor. Discharge for periods of ice effect, Dec. 22 to Jan. 2, Jan. 24 to Feb. 26, determined from gage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Discharge for period of plugged intake Feb. 27 to Mar. 11, determined by comparison with records for stations mentioned above. Regulation from storage in Still Creek Reservoir. Water diverted above station not included in records except in part of monthly table. Record of diversion furnished by Panther Valley Water Co.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May</
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DELAWARE RIVER BASIN

Perkiomen Creek at Graters Ford, Pa.

Location.- Water-stage recorder, lat. $40^{\circ}13'45''$, long. $75^{\circ}27'10''$, 1,650 feet above highway bridge at Graters Ford, Montgomery County, and $2\frac{1}{2}$ miles north of Collegeville. Zero of gage is 112.37 feet above mean sea level.

Drainage area.- 279 square miles.

Records available.- October 1931 to September 1936 in reports of U. S. Geological Survey; June 1914 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 12 years (1914-16, 1926-36), 423 second-feet.

Extremes.- Maximum discharge during year, 16,400 second-feet Jan. 3 (gage height, 11.40 feet) from rating curve extended above 12,000 second-feet; minimum, 12 second-feet Sept. 19, '30 (gage height, 0.86 foot); minimum daily discharge, 21 second-feet Sept. 20.

1914-36: Maximum discharge, 41,200 second-feet July 9, 1935 (gage height, 18.26 feet) from rating curve extended above 12,000 second-feet; minimum, 11 second-feet Sept. 25, 1932.

Remarks.- Records good except those for periods of ice effect, Dec. 24 to Jan. 2, Jan. 24 to Mar. 10, which are fair and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Some regulation from operation of mills upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	700	624	170	155	4,400	425	154	65	.101	25	73
2	62	324	490	180	150	5,500	477	137	61	.91	26	61
3	75	210	383	8,760	150	2,000	640	145	58	.78	34	55
4	66	160	319	2,370	160	2,500	413	398	68	.64	30	50
5	52	141	265	1,630	180	3,500	348	210	71	.69	29	46
6	51	128	248	906	170	2,500	5,330	154	58	.64	24	41
7	59	116	234	640	160	1,600	1,480	137	52	.65	26	40
8	60	122	220	576	150	1,300	904	128	51	.61	27	45
9	57	119	460	3,410	145	1,100	688	117	53	.56	28	42
10	59	101	468	2,450	140	2,300	1,310	103	51	.47	39	40
11	58	99	718	979	135	6,600	1,180	106	52	.41	29	35
12	59	124	564	728	130	6,330	880	103	52	.52	27	
13	62	270	377	824	125	2,120	1,000	106	52	.95	35	27
14	60	381	425	721	120	1,100	664	164	671	.82	40	45
15	64	212	555	800	120	864	525	121	264	.65	27	36
16	56	164	1,210	1,750	190	712	477	99	169	.56	44	40
17	51	6,640	560	760	190	1,430	389	90	125	.88	36	
18	56	4,370	407	640	220	7,190	536	90	126	.46	84	33
19	53	1,780	354	655	250	2,080	308	96	221	.33	56	23
20	54	1,280	319	1,980	230	1,480	293	141	286	.42	47	21
21	50	864	242	1,630	200	2,790	267	100	167	.42	46	42
22	58	576	281	1,280	190	1,780	262	86	121	.41	187	30
23	42	451	256	944	180	904	230	81	93	.40	72	42
24	43	354	250	700	180	744	204	73	96	.42	78	38
25	63	298	215	500	200	656	187	70	134	.40	76	28
26	57	267	205	400	500	539	179	66	104	.38	484	27
27	58	267	200	320	3,000	1,900	183	73	.87	44	190	27
28	58	432	190	260	3,500	2,040	161	95	.75	39	99	37
29	52	3,900	180	220	3,500	880	168	74	.93	33	323	32
30	759	997	175	190	640	161	70	.94	38	172	28	
31	2,070	170	165	518		66	35	.95				
Month				Maximum	Minimum	Mean	Per square mile	Run-off in inches				
				2,070	38	144	0.516	0.59				
				6,640	99	862	3.09	3.45				
				1,210	170	372	1.33	1.53				
				8,760	165	1,217	4.36	5.03				
				3,500	120	508	1.82	1.96				
				7,190	518	2,195	7.86	9.06				
				5,350	161	669	2.40	2.68				
				398	66	118	.423	.49				
				3,820	51	268	.961	1.07				
				159	33	58.1	.208	.24				
				484	24	85.6	.300	.35				
				75	21	38.2	.137	.15				
The year				8,760	21	545	1.95	26.80				

DELAWARE RIVER BASIN

Crum Creek at Woodlyn, Pa.

Location.- Water-stage recorder, lat. $39^{\circ}52'45''$, long. $75^{\circ}21'0''$, at highway bridge at Woodlyn, Delaware County, 2 miles northeast of Chester and $2\frac{1}{2}$ miles above mouth. Zero of gage is 19.58 feet above mean sea level.

Drainage area.- 33.3 square miles.

Records available.- October 1931 to September 1936 in reports of U. S. Geological Survey; June 1931 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during year, 799 second-feet Jan. 9 (gage height, 5.08 feet); minimum, 1.0 second-foot Sept. 25 (gage height, 0.55 foot).

1931-36: Maximum discharge, 1,420 second-feet Aug. 23, 1933 (gage height, 7.56 feet) from rating curve extended above 550 second-feet; minimum, 0.3 second-foot Aug. 21, 1932 (gage height, 0.52 foot).

Remarks.- Records good except those for period of recorder failure and for periods of ice effect, which are poor. Discharge for period of recorder failure, Oct. 10-15, determined by comparison with records for stations in adjacent drainage areas. Discharge for periods of ice effect, Dec. 27 to Jan. 3, Jan. 23 to Feb. 25, determined from gage heights, weather records, two discharge measurements, and by comparison with records for stations mentioned above. Flow regulated by storage in Crum Creek Reservoir, 5 miles upstream. Water diverted from reservoir not included in records except in part of monthly table. Record of pumping furnished by Philadelphia Suburban Water Co.

Daily and monthly discharge, in second-feet, 1935-36

Month	Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
	Maximum	Minimum	Mean	(Mean)	Mean	Per square mile	Run-off in inches	Diversion	Corrected for diversion				
October	1	8.7	45	39	25	35	177	70	46	22	9.6	3.3	5.1
November	2	27	26	43</td									

DELAWARE RIVER BASIN

Ridley Creek at Moylan, Pa.

Location.- Water-stage recorder, lat. $39^{\circ}54'5''$, long. $75^{\circ}23'35''$, at Fox Bank Bridge, at Moylan, Delaware County, 1 mile south of Media. Zero of gage is 87.36 feet above mean sea level.

Drainage area.- 31.9 square miles.

Records available.- October 1931 to September 1936 in reports of U. S. Geological Survey; August 1931 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during year, 1,950 second-feet Jan. 7 (gage height, 5.85 feet) from rating curve extended above 300 second-feet; minimum, 2.6 second-feet Sept. 18 (gage height, 0.51 foot); minimum daily discharge, 6.8 second-feet July 18.

1931-36: Maximum discharge, 3,990 second-feet July 9, 1935 (gage height, 7.81 feet) from rating curve extended above 300 second-feet; minimum, 1.6 second-feet Oct. 2, 1932; minimum daily discharge, 3.8 second-feet Sept. 14, 1932.

Remarks.- Records good except those for high stages and for periods of recorder failure or ice effect, which are fair. Discharge for periods of ice effect, Dec. 25 to Jan. 2, Jan. 25 to Feb. 13, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for periods of recorder failure, June 7-19, Aug. 11 to Sept. 1, determined by comparison with records for stations mentioned above. Flow regulated by storage reservoir of Media Water Co., which diverts about 1.08 second-feet daily to supply borough of Media.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	47	51	34	42	183	79	54	28	25	13	16
2	31	37	48	45	44	123	89	52	27	21	13	14
3	27	33	45	1,020	46	150	98	58	26	20	12	14
4	29	31	43	123	50	157	77	85	26	21	13	13
5	26	31	40	95	49	135	75	57	26	22	13	13
6	30	29	41	72	43	91	286	52	25	20	19	12
7	33	34	39	68	45	67	119	49	23	18	24	12
8	28	39	44	73	43	59	92	47	23	18	18	13
9	25	31	53	622	42	61	94	45	24	16	13	12
10	25	29	45	161	41	72	121	43	25	18	13	11
11	28	30	70	89	41	256	135	44	23	25	13	11
12	42	33	52	81	41	401	98	43	28	31	12	12
13	29	33	47	74	44	125	113	47	43	20	12	9.6
14	27	32	47	71	54	89	86	52	35	17	11	10
15	27	29	48	76	54	78	81	42	30	16	11	10
16	25	28	55	118	56	83	80	40	25	13	12	10
17	26	489	45	76	58	118	74	40	22	11	13	9.6
18	27	187	44	76	107	573	71	39	25	6.8	11	21
19	25	90	42	117	76	187	70	43	45	7.1	11	29
20	25	66	41	79	54	134	68	39	31	16	10	17
21	25	54	36	65	47	222	68	35	27	17	11	22
22	25	50	37	61	44	148	64	35	22	18	21	14
23	26	47	39	56	44	103	63	34	20	14	30	15
24	27	44	38	51	44	96	61	33	32	23	17	12
25	25	42	37	49	143	91	59	31	30	19	15	13
26	24	42	36	47	501	86	60	30	23	15	35	10
27	24	41	35	46	321	181	60	37	22	16	22	10
28	25	60	34	45	262	176	56	33	35	38	17	13
29	25	147	33	44	247	101	57	30	30	25	70	9.8
30	141	58	33	43	90	54	30	26	19	35	15	
31	108	35	43	84	30	30	30	14	14	20		

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	141	24	33.5	1.05	1.21
November	489	28	64.8	2.03	2.26
December	70	33	43.0	1.35	1.56
January	1,020	34	120	3.76	4.34
February	501	41	92.5	2.80	3.13
March	573	59	146	4.58	5.28
April	286	54	86.9	2.72	3.04
May	85	30	42.9	1.34	1.54
June	45	20	27.6	.865	.97
July	38	6.8	18.7	.586	.68
August	70	10	18.1	.567	.65
September	29	9.6	13.4	.420	.47
The year	1,020	6.8	58.9	1.85	25.13

DELAWARE RIVER BASIN

Chester Creek near Chester, Pa.

Location.- Water-stage recorder, lat. $39^{\circ}52'10''$, long. $75^{\circ}24'30''$, at Dutton Mill Bridge, 3 miles northwest of Chester, Delaware County. Zero of gage is 23.54 feet above mean sea level.

Drainage area.- 61.1 square miles.

Records available.- October 1931 to September 1936 in reports of U. S. Geological Survey; August 1931 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during year, 3,620 second-feet Jan. 9 (gage height, 10.50 feet) from rating curve extended above 800 second-feet; minimum, 8.2 second-feet Sept. 26 (gage height, 0.50 foot); minimum daily discharge, 16 second-feet Sept. 15, 17.

1931-36: Maximum discharge, 4,270 second-feet Aug. 23, 1933 (gage height, 11.48 feet) from rating curve extended above 800 second-feet; minimum, 0.3 second-foot Aug. 7, 1934 (gage height, 0.28 foot); minimum daily discharge, 6.8 second-feet Sept. 11, 14, 1932.

Remarks.- Records good except those for extremely high stages and for periods of ice effect, which are fair. Discharge for periods of ice effect, Dec. 24 to Jan. 2, Jan. 23 to Feb. 19, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Regulation from operation of mills upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	78	81	47	71	270	118	89	48	38	26	25
2	48	62	71	60	70	170	139	88	47	38	26	22
3	42	53	61	1,680	72	300	158	92	44	37	24	25
4	39	45	65	243	84	208	119	173	44	39	24	24
5	36	45	59	179	78	168	113	105	45	41	23	21
6	43	45	61	124	74	123	595	91	43	36	30	21
7	50	55	58	116	73	97	204	86	39	33	61	21
8	42	65	64	114	77	87	153	83	39	32	31	19
9	40	52	80	1,230	77	92	155	80	42	29	26	22
10	40	49	70	329	74	113	215	76	44	28	25	21
11	40	48	123	149	73	648	259	74	42	36	24	17
12	72	59	88	127	73	710	173	74	61	69	23	19
13	44	56	69	120	72	211	203	74	92	36	21	19
14	43	59	71	109	120	143	148	84</				

DELAWARE RIVER BASIN

White Clay Creek near Newark, Del.

Location.- Water-stage recorder, lat. $39^{\circ}42'0''$, long. $75^{\circ}41'5''$, at Baltimore & Ohio Railroad bridge $3\frac{1}{2}$ miles east of Newark, New Castle County. Zero of gage is about 12 feet above mean sea level.

Drainage area.- 87.8 square miles.

Records available.- November 1931 to September 1936 (discontinued).

Extremes.- Maximum discharge during year, 6,030 second-feet Jan. 3 (gage height, 15.0 feet, from extension of recorder graph) from rating curve extended above 2,000 second-feet; minimum, 19 second-feet Sept. 15 (gage height, 3.80 feet); minimum daily discharge, 27 second-feet Sept. 17.

1931-36: Maximum discharge, 6,830 second-feet Aug. 23, 1933 (gage height, 16.05 feet, from floodmark) from rating curve extended above 2,000 second-feet; minimum, 9.1 second-feet Sept. 18, 1932 (gage height, 3.71 feet); minimum daily discharge, 12 second-feet Sept. 18, 26, 1932.

Remarks.- Records good except those for high stages and for periods of ice effect, which are fair. Discharge for periods of ice effect, Dec. 25 to Jan. 2, Jan. 23 to Feb. 25, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Regulation at low stages from operations of mills upstream.

DELAWARE RIVER BASIN

Brandywine Creek at Chadds Ford, Pa.

Location.- Water-stage recorder, lat. $39^{\circ}52'10''$, long. $75^{\circ}35'35''$, at Pennsylvania Railroad bridge at Chadds Ford, Delaware County. Zero of gage is 150.19 feet above mean sea level.

Drainage area.- 287 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; August 1911 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 25 years, 378 second-feet.

Extremes.- Maximum discharge during year, 11,500 second-feet Jan. 3 (gage height, 11.21 feet) from rating curve extended above 7,000 second-feet; minimum, 59 second-feet Sept. 25, 26 (gage height, 0.52 foot); minimum daily discharge, 99 second-feet Sept. 28.

1911-36: Maximum discharge, 30,500 second-feet Mar. 5, 1920 (gage height, 15.0 feet, from floodmark) from rating curve extended above 7,000 second-feet; minimum, 18 second-feet Jan. 22, 1931 (gage height, 0.34 foot); minimum daily discharge, 50 second-feet Sept. 11, 13, 23, 1932.

Remarks.- Records good except those for periods of recorder failure or ice effect, which are fair. Discharge for period of recorder failure, Dec. 5-7, determined by comparison with records for stations in adjacent drainage areas. Discharge for periods of ice effect, Dec. 26 to Jan. 2, Jan. 24 to Feb. 4, Feb. 10-15, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations mentioned above. Regulation at low stages from operation of mills upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	61	94	119	84	107	303	144	113	70	60	39	34
2	76	80	110	106	162	113	69	58	38	34		
3	66	74	103	3,930	105	314	192	118	68	56	37	39
4	61	70	98	423	125	238	146	241	70	62	36	36
5	59	68	90	328	135	200	140	135	69	84	36	32
6	66	66	92	205	130	160	836	116	65	63	45	31
7	78	74	90	183	123	130	243	110	63	53	122	30
8	65	94	107	177	115	119	188	107	63	50	50	30
9	63	72	133	2,130	120	126	178	104	63	48	41	29
10	63	68	108	448	130	143	255	99	61	46	39	29
11	66	74	343	208	125	1,380	293	99	64	61	37	28
12	103	78	157	183	120	1,170	196	100	84	46	39	31
13	70	81	126	175	115	269	202	102	129	44	37	32
14	68	111	126	164	180	182	170	112	84	45	35	29
15	65	80	126	237	200	166	162	98	73	42	34	28
16	61	74	146	320	210	155	159	94	66	38	39	29
17	61	1,790	114	173	250	222	146	93	63	38	36	27
18	62	781	107	175	330	1,090	142	98	69	38	31	30
19	61	175	105	338	250	264	139	116	77	38	31	40
20	61	152	102	202	200	222	137	98	73	62	32	30
21	59	128	111	171	220	550	133	88	61	63	32	41
22	61	115	138	144	190	254	128	86	54	46	76	36
23	65	107	103	135	160	186	126	86	54	42	60	32
24	74	98	94	130	150	178	125	83	79	128	38	32
25	62	97	90	125	800	170	121	79	85	86	34	30
26	59	94	87	120	1,820	157	125	76	63	49	48	28
27	58	94	85	117	888	355	121	86	58	51	37	28
28	59	121	83	114	594	369	120	80	73	54	37	29
29	59	436	82	112	470	184	118	74	68	46	65	28
30	314	144	82	110	166	116	76	60	53	63	34	
31	108	68	108	155			73		42	40		

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	314	58	74.6	0.850	0.98
November	1,790	66	186	2.12	2.36
December	343	82	114	1.30	1.50
January	3,930	84	374	4.26	4.91
February	1,820	105	292	5.33	5.59
March	1,380	119	315	3.59	4.14
April	836	116	182	2.07	2.31
May	241	73	102	1.16	1.34
June	129	54	69.9	.796	.89
July	128	38	54.6	.622	.72
August	122	31	44.0	.501	.58
September	41	27	31.5	.359	.40
The year	3,930	27	153	1.74	23.72

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	207	369	447	280	350	1,800	761	510	264	231	133	146
2	235	280	415	350	340	1,130	824	502	253	209	128	135
3	213	244	386	6,190	350	1,210	952	526	243	200	124	138
4	201	229	369	2,640	400	1,440	740	1,000	306	206	120	131
5	192	222	350	1,380	433	1,260	698	597	271	212	116	123
6	207	213	360	900	422	876	2,320	510	244	194	144	121
7	222	229	350	698	383	655	1,410	479	235	180	231	114
8	204	254	362	655	436	575	952	460	231	171	146	118
9	198	226	496	2,750	422	595	883	441	231	165	136	120
10	195	207	455	2,800	400	765	1,150	422	231	150	123	115
11	201	216	555	1,040	390	2,030	1,080	418	244	160		

North Branch of Susquehanna River at Binghamton, N. Y.

Location.—Chain gage, lat. $42^{\circ}5'30''$, long. $75^{\circ}54'55''$, at Washington Street Bridge, at Binghamton, Broome County, 500 feet upstream from mouth of Chenango River.

Zero of gage is 821.49 feet above mean sea level.

Drainage area.—2,290 square miles.

Records available.—July 1901 to December 1912, January 1915 to September 1936.

Extremes.—Maximum gage height observed during year, 22.85 feet Mar. 18; minimum, 1.69 feet Aug. 1.

1901-12, 1915-36: Maximum gage height, that of Mar. 18, 1936; minimum, 1.5 feet Sept. 20, 1908.

Maximum stage known, 23.5 feet Mar. 17, 1865.

Remarks.—Records good. Gage heights are obtained at this station for flood-warning purposes. Discharge is not determined.

SUSQUEHANNA RIVER BASIN

Daily mean gage height in feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.77	10.00	5.01	3.76	4.50	3.94	5.50	3.28	2.46	1.96	1.76	2.10
2	1.99	6.60	4.61	3.70	4.20	3.80	5.33	3.24	2.46	1.98	1.85	2.21
3	1.96	4.70	4.25	3.28	3.87	3.30	6.28	3.42	2.38	2.00	1.82	1.99
4	2.02	3.87	4.03	3.77	3.76	3.20	6.12	4.10	2.37	1.96	1.82	2.05
5	2.03	3.46	3.75	4.13	3.79	3.75	5.40	3.94	2.32	1.95	1.74	2.05
6	2.02	3.92	3.37	4.06	3.62	3.79	5.62	3.45	2.27	1.94	1.86	2.00
7	2.00	4.06	3.15	3.70	3.62	3.88	7.02	3.22	2.22	2.04	1.96	2.02
8	1.91	4.00	3.37	3.49	3.49	3.66	6.76	3.20	2.15	1.91	2.02	1.94
9	1.90	4.12	3.75	3.58	3.48	3.52	6.14	3.24	2.14	1.98	2.02	2.00
10	1.88	3.80	4.85	3.34	3.42	4.70	5.94	3.12	2.18	2.00	2.06	1.97
11	1.93	3.60	4.69	3.37	3.46	8.90	6.09	2.96	2.20	1.92	2.08	1.90
12	1.95	3.55	4.24	3.33	3.41	15.50	6.12	2.84	2.20	1.92	1.99	1.96
13	2.04	9.10	3.97	3.33	3.36	16.90	7.68	2.83	2.14	1.92	1.96	1.94
14	2.08	12.90	4.29	3.38	3.39	13.31	7.52	2.83	2.14	1.90	1.90	1.90
15	2.06	11.00	5.23	3.22	3.38	9.95	7.01	2.99	2.15	1.84	2.06	2.00
16	2.00	8.00	5.53	3.78	3.34	11.50	6.56	3.00	2.14	1.78	2.00	1.95
17	1.96	5.95	5.17	3.98	3.19	15.55	6.00	2.83	2.12	1.86	1.92	1.93
18	2.03	5.14	4.51	3.63	3.16	21.10	5.53	2.78	2.12	1.85	2.04	1.90
19	2.04	5.12	4.13	3.42	3.18	21.90	5.20	2.76	2.22	1.82	2.06	2.34
20	2.02	5.77	3.97	3.12	3.18	18.60	4.91	3.20	2.20	1.82	2.38	2.50
21	2.04	6.29	3.79	3.24	3.10	14.90	4.64	3.26	2.48	1.80	2.21	2.24
22	2.02	5.73	3.55	3.47	3.07	12.86	4.90	3.12	2.24	1.85	2.38	2.14
23	1.98	5.11	3.14	3.75	3.10	10.43	4.64	2.86	2.14	1.82	2.20	2.05
24	2.01	4.61	3.60	4.49	2.99	8.60	4.29	2.67	2.08	1.88	2.17	2.06
25	2.12	4.20	3.68	5.16	2.66	8.00	3.99	2.66	2.08	1.88	2.20	1.98
26	2.08	3.95	3.44	4.20	2.70	7.55	3.79	2.61	2.08	1.82	2.12	2.00
27	2.08	3.90	3.50	4.22	3.17	7.00	3.58	2.64	2.04	1.85	2.13	1.96
28	2.04	4.04	3.68	4.02	3.84	7.46	3.48	2.56	2.02	1.81	2.09	1.91
29	2.04	5.42	4.07	3.74	3.35	6.82	3.36	2.55	1.99	1.79	2.05	1.94
30	2.12	5.75	4.13	3.84	5.92	3.32	2.52	1.99	1.76	2.08	2.00	2.00
31	8.40		4.12	3.84		5.67		2.49		1.76		2.02

North Branch of Susquehanna River at Towanda, Pa.

Location.—Wire-weight gage, lat. $41^{\circ}45'55''$, long. $76^{\circ}26'25''$, at Bridge Street Bridge, at Towanda, Bradford County. Zero of gage is 693.85 feet above mean sea level.
Drainage area.—7,797 square miles.
Records available.—October 1918 to October 1920, October 1931 to September 1936 in reports of U. S. Geological Survey; December 1892 to September 1936 in reports of Pennsylvania Department of Forests and Waters.
Average discharge.—18 years (1918-36), 10,020 second-feet.
Extremes.—Maximum discharge during year, 188,000 second-feet Mar. 19 (gage height, 25.03 feet); minimum, 550 second-feet July 22, Aug. 3 (gage height, -0.08 foot).
1892-1936: Maximum discharge, that of Mar. 19, 1936; minimum, 538 second-feet Dec. 3, 1930 (gage height, -0.15 foot); minimum daily discharge, 560 second-feet Aug. 3, 1936.
Remarks.—Records good except those for periods of ice effect, Dec. 5-9, Dec. 24 to Jan. 6, Jan. 20 to Mar. 6, which are fair and were determined from gage heights, weather records, and by comparison with records for stations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,720	36,200	15,700	4,600	4,200	14,000	26,000	8,200	3,360	1,210	580	1,370
2	1,920	27,200	12,700	4,800	4,000	12,300	22,400	8,200	3,210	1,060	580	1,370
3	2,380	15,700	10,700	5,200	3,900	11,600	28,400	9,400	3,060	1,210	560	1,370
4	2,640	11,200	9,400	6,000	3,850	11,500	25,400	16,200	2,780	1,290	580	1,290
5	2,380	8,600	6,700	7,600	3,800	11,700	21,800	13,700	2,640	1,210	610	1,140
6	2,260	7,410	6,000	14,000	3,700	13,000	21,200	11,700	2,380	1,140	875	1,140
7	2,030	9,400	5,500	11,700	3,650	15,700	30,800	9,800	2,140	1,060	995	995
8	1,920	9,400	5,400	9,800	3,600	14,600	29,000	9,000	2,140	1,060	1,290	995
9	1,820	10,200	5,500	9,000	3,550	13,700	25,400	8,200	2,140	1,060	1,140	930
10	1,720	9,400	14,700	8,600	3,500	19,700	23,000	7,800	2,030	930	1,060	875
11	1,630	8,200	16,700	8,200	3,400	44,000	23,600	7,020	2,030	995	2,260	875
12	1,630	8,200	14,200	8,200	3,400	133,000	27,200	6,250	2,920	930	1,920	875
13	1,630	16,900	12,200	7,410	3,400	137,000	32,600	5,880	3,360	875	1,540	875
14	1,370	57,100	13,700	7,020	3,400	85,900	36,200	6,250	2,780	820	1,210	820
15	1,540	50,800	20,700	7,020	3,500	61,900	31,400	6,630	2,380	875	1,460	820
16	1,460	37,400	27,200	7,410	3,350	73,800	28,400	6,630	2,140	820	1,370	875
17	1,370	23,600	26,000	8,200	3,250	115,000	24,200	5,880	1,820	720	1,210	995
18	1,370	18,200	18,700	8,600	3,750	164,000	20,700	5,160	1,820	680	995	875
19	1,290	16,700	15,200	7,020	3,600	182,000	18,700	5,520	3,660	720	930	820
20	1,290	16,700	13,200	6,000	3,500	158,000	17,200	8,600	3,210	680	3,850	1,540
21	1,290	22,400	11,200	5,100	3,400	116,000	15,700	9,000	2,510	640	3,360	2,030
22	1,290	20,200	8,200	6,400	3,300	83,300	15,700	7,800	2,510	580	3,210	1,540
23	1,290	16,700	7,020	6,000	3,200	61,300	15,700	6,630	2,030	610	2,780	1,290
24	1,370	13,700	6,300	5,700	3,100	47,400	13,700	5,280	1,720	680	3,510	1,140
25	1,290	11,200	5,700	5,400	3,100	49,100	11,700	5,160	1,540	680	2,380	1,140
26	1,370	9,800	5,300	5,100	3,500	53,600	10,700	4,470	1,460	680	2,140	995
27	1,460	9,000	5,100	4,900	5,500	43,400	9,800	4,470	1,460	680	1,630	930
28	1,370	9,000	4,900	4,700	10,000	43,100	9,000	4,300	1,460	640	1,460	875
29	1,370	11,700	4,700	4,500	12,000	36,900	8,200	4,140	1,290	680	1,540	820
30	3,210	16,700	4,600	4,400		29,700	8,200	3,820	1,290	640	1,630	820
31	8,230		4,500	4,300		27,900		3,660		610	1,540	
	Month					Maximum	Minimum	Mean	Per square mile	Run-off in inches		
October						8,230	1,290	1,900	0.244	0.28		
November						57,100	8,200	17,960	2.30	2.57		
December						27,200	4,500	10,890	1.40	1.61		
January						14,000	4,300	6,867	.881	1.02		
February						12,000	3,100	4,117	.528	.57		
March						182,000	11,500	60,780	7.80	8.99		
April						36,200	8,200	21,070	2.70	3.01		
May						16,200	3,660	7,269	.932	1.07		
June						3,660	1,290	2,309	.296	.33		
July						1,290	580	854	.110	.13		
August						3,850	560	1,619	.208	.24		
September						2,030	820	1,081	.139	.16		
The year						182,000	560	11,440	1.47	19.98		

North Branch of Susquehanna River at Wilkes-Barre, Pa.

Location.— Water-stage recorder, lat. $41^{\circ}15'0''$, long. $75^{\circ}53'10''$, at Market Street Bridge, at Wilkes-Barre, Luzerne County. Zero of gage is 511.94 feet above mean sea level.
Drainage area.— 9,960 square miles.
Records available.— March 1899 to December 1913, October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; November 1890 to September 1936 in reports of Pennsylvania Department of Forests and Waters.
Average discharge.— 37 years (1899-1936), 13,540 second-feet.
Extremes.— Maximum discharge during year, 232,000 second-feet Mar. 20 (gage height 33.07 feet); minimum, 1,150 second-feet Aug. 2, 3 (gage height, 1.25 feet).
1890-1936: Maximum discharge, that of Mar. 20, 1936; minimum, 820 seconds Sept. 12, 16, 17, 20, 1913.
Maximum stage known, 33.1 feet, from floodmarks, Mar. 18, 1865 (discharge about 232,000 second-feet).
Remarks.— Records good except those for periods of ice effect, Dec. 25 to Jan. 1, Jan. 23 to Feb. 28, which are poor and were determined from gage heights, weather records, and by comparison with records for stations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,020	18,000	20,600	5,000	5,700	17,700	33,000	10,100	4,300	2,020	1,180	2,170
2	2,020	38,300	18,100	5,380	5,600	16,100	29,200	9,800	4,180	1,950	1,180	2,020
3	2,160	24,100	15,000	6,120	5,400	14,300	29,800	9,800	3,800	1,880	1,150	1,950
4	2,300	16,000	12,900	8,080	5,300	12,900	32,500	11,500	3,680	1,820	1,180	1,880
5	2,600	11,900	11,000	9,200	5,200	14,000	28,200	16,900	3,440	1,820	1,180	1,820
6	2,840	10,400	9,500	11,500	5,100	17,600	28,200	14,600	3,110	1,820	1,290	1,820
7	2,680	9,500	8,360	21,300	5,000	30,100	32,000	12,900	3,000	1,750	1,290	1,630
8	2,600	10,400	7,800	12,200	4,900	17,700	37,100	11,300	2,800	1,750	1,330	1,580
9	2,450	11,000	7,800	11,000	4,750	17,100	33,600	10,100	2,600	1,690	1,470	1,580
10	2,300	11,000	10,400	11,600	4,700	19,900	30,300	9,500	2,600	1,630	1,630	1,470
11	2,230	10,400	17,100	11,000	4,600	48,800	29,200	8,910	2,600	1,630	1,750	1,470
12	2,020	9,200	18,100	10,700	4,500	129,000	31,400	8,040	2,800	1,580	1,690	1,420
13	2,160	18,900	15,400	10,400	4,400	182,000	34,700	7,340	2,800	1,470	2,600	1,380
14	2,020	58,600	14,600	10,100	4,300	150,000	45,200	6,920	3,560	1,520	2,330	1,380
15	2,020	68,100	20,000	9,800	4,500	99,400	41,300	7,060	3,560	1,470	2,250	1,380
16	1,890	53,800	26,700	12,200	4,200	80,200	37,100	7,480	3,220	1,380	1,950	1,380
17	1,770	38,100	33,000	11,600	4,400	125,000	32,000	7,340	2,900	1,380	1,950	1,330
18	1,890	25,700	25,700	10,700	4,400	192,000	27,200	6,650	2,700	1,330	1,880	1,330
19	1,830	21,000	19,700	11,000	4,200	229,000	23,800	6,520	3,000	1,290	1,750	1,380
20	1,720	20,500	16,900	9,500	4,000	221,000	21,500	6,650	3,440	1,250	1,630	1,380
21	1,660	26,700	14,000	5,130	3,900	184,000	19,700	9,310	6,780	1,250	2,280	1,330
22	1,720	27,700	12,200	4,310	4,100	144,000	18,900	10,100	4,940	1,250	4,240	1,680
23	1,770	23,800	10,100	7,400	3,900	99,000	18,500	8,620	3,680	1,220	3,560	2,170
24	1,770	19,300	8,080	7,100	3,800	72,300	17,700	7,620	3,440	1,250	3,680	1,880
25	1,720	15,700	7,000	6,900	3,700	59,000	15,700	6,780	3,110	1,220	3,920	1,690
26	1,720	13,600	6,000	6,700	4,200	63,500	14,000	6,110	2,700	1,220	3,560	1,520
27	1,720	12,200	5,500	6,400	6,000	62,200	12,600	5,580	2,420	1,220	2,900	1,520
28	1,720	12,900	5,200	6,200	12,000	52,800	11,600	5,450	2,330	1,220	2,510	1,470
29	1,770	20,200	5,000	6,000	15,000	51,700	10,700	5,190	2,250	1,220	2,420	1,520
30	2,230	18,900	4,900	5,900		41,200	10,100	4,930	2,100	1,180	2,250	1,520
31	6,650		4,900	5,800		33,900		4,680		1,180	2,100	

Month

Maximum

Minimum

Mean

Per square
mile

Run-off in
inches

October.....	6,650	1,660	2,193	0.220	0.25
November.....	68,100	9,200	22,530	2.26	2.52
December.....	33,000	4,900	13,280	1.33	1.53
January.....	21,300	4,310	8,910	.895	1.03
February.....	15,000	3,700	5,233	.525	.57
March.....	229,000	12,900	80,560	8.09	9.33
April.....	45,200	10,100	26,230	2.63	2.93
May.....	16,900	4,680	8,509	.854	.98
June.....	6,780	2,100	3,261	.327	.36
July.....	2,020	1,180	1,479	.148	.17
August.....	4,240	1,150	2,132	.214	.25
September.....	2,170	1,330	1,602	.161	.18
The year.....	229,000	1,150	14,720	1.48	20.10

SUSQUEHANNA RIVER BASIN

North Branch of Susquehanna River at Danville, Pa.

Location. - Wire-weight gage, lat. $40^{\circ}57'25''$, long. $76^{\circ}37'20''$, at highway bridge at Danville, Montour County. Zero of gage is 431.07 feet above mean sea level.

Drainage area. - 11,220 square miles.

Records available. - March 1899 to December 1913, October 1918 to September 1921, July 1932 to September 1936 in reports of U. S. Geological Survey; March 1899 to December 1903, March 1905 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 33 years (1899-1900, 1901-3, 1905-31, 1932-36), 15,200 second-feet.

Extremes. - Maximum discharge during year, 250,000 second-feet Mar. 20; maximum gage height, 28.00 feet Mar. 19 (affected by backwater); minimum discharge, 1,020 second-feet Aug. 3 (gage height, 1.84 feet).

1899-1936: Maximum discharge, that of Mar. 20, 1936; maximum gage height, 30.7 feet, from floodmarks, Mar. 9, 1904 (affected by ice); minimum discharge, 830 second-feet Sept. 23-25, 1900 (gage height, 1.6 feet).

Remarks. - Records good except those for days of missing gage heights and for period of backwater effect, which are fair, and those for periods of ice effect, which are poor. Discharge for days of missing gage heights, Oct. 9, Nov. 28, Dec. 5, 14, 23, Jan. 18, 20, 21, Apr. 3, 16, 18, May 20, 29, June 18, July 12, 17, Aug. 6, 10, and for period of backwater effect, Mar. 18, 19, determined by comparison with records for station at Wilkes-Barre. Discharge for periods of ice effect, Dec. 25 to Jan. 1, Jan. 22 to Mar. 6, determined from gage heights, weather records, and by comparison with records for stations upstream. Discharge for extremely high stages determined from graph based on twice-daily gage readings.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,120	9,360	28,900	5,600	6,400	27,000	33,900	10,700	5,180	2,820	1,100	2,530
2	2,120	32,500	25,500	6,780	6,500	30,000	34,600	10,700	4,800	2,680	1,100	2,530
3	2,120	33,200	20,600	8,480	6,100	25,000	37,000	10,700	4,430	2,530	1,020	2,390
4	2,250	21,200	18,300	11,200	6,000	22,000	34,600	10,700	4,430	2,390	1,100	2,250
5	2,390	15,100	15,500	13,600	5,900	30,000	33,200	15,500	4,430	2,390	1,100	2,120
6	2,820	10,300	13,100	14,600	5,700	42,000	33,900	17,200	3,920	2,250	1,100	2,120
7	2,970	10,700	10,700	24,200	5,500	54,500	40,800	15,100	3,590	2,250	1,100	1,980
8	2,820	9,810	9,810	17,800	5,400	26,500	43,300	13,100	3,590	2,120	1,290	1,860
9	2,650	11,600	9,810	14,600	5,300	23,500	40,800	12,600	3,450	1,980	1,200	1,730
10	2,530	10,300	15,600	16,700	5,200	26,500	37,700	10,700	3,280	1,980	1,600	1,730
11	2,530	11,600	23,000	16,100	5,100	52,600	35,400	9,810	3,280	2,120	1,860	1,620
12	2,390	10,700	20,600	14,600	5,000	134,000	36,100	9,360	3,590	2,000	1,980	1,620
13	2,250	13,100	20,600	13,600	4,800	186,000	38,400	8,480	3,920	1,730	1,860	1,500
14	2,250	48,400	19,000	13,600	4,700	179,000	39,200	7,620	3,750	1,730	2,820	1,500
15	2,120	73,400	21,800	13,100	4,800	125,000	50,100	7,620	4,430	1,730	2,820	1,400
16	2,120	63,600	30,300	15,600	4,500	91,200	44,000	8,050	4,080	1,620	2,820	1,290
17	1,980	48,400	38,400	16,700	4,700	113,000	40,000	8,050	3,750	1,600	2,390	1,400
18	1,980	35,400	36,900	16,000	4,800	190,000	32,000	8,050	4,100	1,500	2,120	1,400
19	1,980	25,500	23,200	14,600	4,600	241,000	26,200	7,200	4,430	1,500	2,120	1,290
20	1,980	24,200	22,400	11,000	4,400	245,000	25,500	7,600	4,080	1,400	1,980	1,400
21	1,980	27,500	19,400	8,200	4,300	210,000	23,600	8,050	4,800	1,290	2,250	1,400
22	1,750	33,900	17,200	6,000	4,300	157,000	21,200	10,700	7,200	2,820	1,400	
23	1,860	31,000	14,000	8,500	4,200	116,000	20,600	10,300	4,800	1,290	4,800	1,500
24	1,860	25,500	12,100	8,100	4,200	88,500	20,600	8,920	4,430	1,200	4,080	2,390
25	1,730	21,200	9,800	7,900	4,200	67,900	18,300	8,050	4,080	1,290	4,080	2,120
26	1,730	19,400	8,500	7,700	4,700	66,200	16,100	7,200	3,750	1,290	4,430	1,860
27	1,730	15,600	7,400	7,500	6,800	70,400	14,600	6,780	3,450	1,200	3,920	1,730
28	1,730	17,500	6,600	7,200	15,000	61,200	13,100	6,370	2,820	1,200	3,280	1,620
29	1,860	26,900	6,000	7,000	21,500	52,200	12,100	6,200	2,970	1,200	3,120	1,620
30	2,530	26,900	5,700	6,800	49,500	11,600	5,570	2,970	1,200	2,970	1,730	
31	3,280	5,500	6,600		40,100	5,180			1,100	2,680		

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October.....	3,280	1,730	2,206	0.197	0.23
November.....	73,400	9,360	25,460	2.27	2.53
December.....	38,400	5,500	17,460	1.56	1.80
January.....	24,200	5,600	11,610	1.03	1.19
February.....	21,500	4,200	6,014	.536	.58
March.....	245,000	23,500	91,900	8.19	9.44
April.....	50,100	11,800	30,280	2.70	3.01
May.....	17,200	5,180	9,428	.840	.97
June.....	7,200	2,820	4,058	.362	.40
July.....	2,820	1,100	1,738	.155	.18
August.....	4,800	1,020	2,352	.210	.24
September.....	2,530	1,290	1,768	.158	.18
The year.....	245,000	1,020	17,100	1.52	20.75

SUSQUEHANNA RIVER BASIN

Susquehanna River at Sunbury, Pa.

Location. - Wire-weight gage, lat. $40^{\circ}50'55''$, long. $76^{\circ}48'20''$, at highway bridge at Sunbury, Northumberland County. Zero of gage is 419.00 feet above mean sea level.

Drainage area. - 18,300 square miles.

Records available. - August 1916 to September 1936.

Extremes. - Maximum gage height during year, 26.85 feet, from floodmark, Mar. 19; minimum, 0.50 foot Aug. 5.

1916-36: Maximum gage height, that of Mar. 19, 1936; minimum, 0.32 foot Sept. 25-27, 1932, at a site 3,700 feet upstream.

Remarks. - Records good. Gage heights for Mar. 19-23 determined from flood crest and comparison with stage graphs of nearby stations. Station is maintained for flood-warning purposes. Discharge is not determined.

Daily mean gage height in feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1												

SUSQUEHANNA RIVER BASIN

Susquehanna River at Harrisburg, Pa.

Location.— Water-stage recorder, lat. $40^{\circ}15'10''$, long. $76^{\circ}52'30''$, at Nagle Street, 500 feet above sanitary dam, and at Market Street Bridge, 3,700 feet above sanitary dam, and wire-weight gage at Walnut Street Bridge, 500 feet above Market Street, in Harrisburg, Dauphin County. Zero of gage is 290.04 feet above mean sea level.

Drainage area.— 24,100 square miles.

Records available.— October 1890 to September 1936.

Average discharge.— 46 years, 34,690 second-feet.

Extremes.— Maximum discharge during year, 740,000 second-feet Mar. 19 (Nagle Street gage height, 29.23 feet; Walnut Street gage height, 30.33 feet); minimum, 2,870 second-feet Sept. 19, 1925 (Nagle Street gage height, 2.93 feet; Walnut Street gage height, 3.00 feet).

1890-1936: Maximum discharge, that of Mar. 19, 1936; minimum, 1,600 second-feet Nov. 29, 1930 (Nagle Street gage height, 2.48 feet; Walnut Street gage height, 2.56 feet).

Remarks.— Records excellent except those for extremely high stages and those for periods of ice effect, which are fair. Discharge for periods of ice effect, Dec. 24 to Jan. 18, Jan. 23 to Mar. 9, based on power-house records of Holtwood plant of Pennsylvania Water & Power Co.

SUSQUEHANNA RIVER BASIN

Susquehanna River at Marietta, Pa.

Location.— Water-stage recorder, lat. $40^{\circ}3'15''$, long. $76^{\circ}31'50''$, 420 feet above mouth of Chickies Creek and 1 mile below Marietta, Lancaster County. Zero of gage is 200.00 feet above mean sea level.

Drainage area.— 25,990 square miles.

Records available.— October 1931 to September 1936.

Extremes.— Maximum discharge during year, 787,000 second-feet Mar. 19 (gage height, 60.73 feet) from rating curve extended above 450,000 second-feet on basis of channel studies; minimum, 2,490 second-feet Sept. 26 (gage height, 31.78 feet); minimum daily discharge, 3,000 second-feet Sept. 20.

1931-36: Maximum discharge, that of Mar. 19, 1936; minimum, 618 second-feet Sept. 26, 1932 (gage height, 30.89 feet) during shut-down at York Haven Power plant in order to obtain low-water current meter measurements; minimum daily discharge, 1,380 second-feet Sept. 26, 1932.

Remarks.— Records good except those for extremely high stages and those for period of ice effect, Dec. 22 to Mar. 6, which are fair. Discharge for period of ice effect based on power-house records of Holtwood plant of Pennsylvania Water & Power Co. Flows below 8,000 second-feet regulated by York Haven Power Co. plant upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,120	11,900	39,200	11,500	18,000	75,000	84,000	24,400	11,600	7,650	4,710	9,500
2	4,120	13,800	36,600	12,500	18,000	81,000	75,900	23,400	11,000	7,390	4,490	9,800
3	4,120	37,300	35,300	19,000	17,000	78,000	71,600	23,000	10,600	7,780	3,940	9,050
4	4,010	36,000	30,300	25,000	16,000	78,900	68,900	23,000	10,100	7,390	3,720	8,300
5	4,120	26,000	26,700	28,000	16,000	78,000	67,300	23,400	9,650	7,650	3,720	7,260
6	4,320	20,000	23,700	32,000	15,500	82,000	80,200	27,700	9,050	7,390	3,500	6,350
7	4,640	16,600	20,700	30,000	15,000	95,000	114,000	29,800	8,600	6,740	3,500	5,830
8	4,850	15,100	19,400	34,000	14,500	140,000	119,000	27,200	8,300	6,220	3,500	5,480
9	4,960	14,100	17,900	43,000	14,000	91,000	112,000	24,800	8,040	5,700	3,500	5,370
10	4,850	15,100	18,500	41,000	15,500	93,200	101,000	22,300	7,910	5,370	4,050	4,820
11	4,740	15,600	21,100	40,000	13,000	130,000	94,500	20,700	7,910	5,260	5,040	4,490
12	4,540	16,000	32,000	38,000	12,500	304,000	91,900	19,800	8,300	5,480	5,260	4,380
13	4,450	23,300	40,600	36,000	12,000	424,000	89,300	19,000	8,750	5,040	5,480	4,050
14	4,320	58,900	42,000	35,000	12,000	368,000	86,700	19,000	10,600	4,820	5,480	5,720
15	4,120	101,000	52,000	34,000	12,500	267,000	91,900	18,000	13,700	4,710	5,480	3,610
16	4,010	102,000	59,800	34,000	13,000	203,000	86,700	17,300	13,700	4,600	6,090	3,500
17	3,800	84,000	71,600	35,000	14,000	219,000	75,800	16,300	11,800	4,380	6,350	3,410
18	3,800	65,800	78,600	39,000	15,000	414,000	65,800	15,900	11,000	4,160	6,220	3,320
19	3,700	52,000	71,600	36,600	16,000	691,000	58,300	18,100	15,900	3,940	5,480	3,140
20	3,600	43,300	56,700	27,400	15,500	614,000	52,000	15,600	16,500	3,720	5,150	3,230
21	3,500	39,200	47,600	22,400	15,000	440,000	47,600	15,800	14,400	3,720	5,040	3,140
22	3,500	43,300	37,900	20,900	14,000	342,000	43,300	16,100	12,700	4,050	4,930	3,230
23	3,500	44,700	34,000	18,000	13,500	258,000	40,600	18,400	13,500	4,160	5,480	3,320
24	3,400	40,600	26,000	16,000	13,000	193,000	39,200	18,400	12,800	3,940	6,680	3,320
25	3,300	35,300	21,000	13,000	13,000	157,000	36,600	16,500	11,000	3,720	8,300	3,050
26	3,110	30,300	18,000	12,000	15,000	158,000	34,000	15,200	9,650	3,830	8,450	3,720
27	3,110	26,700	15,000	13,000	23,000	146,000	31,600	14,400	8,900	4,160	8,600	3,940
28	3,210	24,800	15,000	15,000	38,000	146,000	28,400	13,700	8,600	4,490	8,300	3,610
29	3,860	25,700	11,500	14,500	53,000	132,000	26,700	13,000	7,650	4,600	8,300	3,410
30	11,600	37,900	11,000	15,000	121,000	25,300	12,800	7,390	4,820	8,170	3,610	
31	11,400	11,000	17,500			99,600	12,300			4,930	8,450	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	11,600	3,110	4,473	0.186	0.21
November	102,000	11,900	37,200	1.54	1.72
December	78,600	11,000	35,560	1.39	1.60
January	43,000	11,500	28,070	1.08	1.24
February	53,000	12,000	16,910	.702	.76
March	691,000	75,000	216,000	8.97	10.34
April	119,000	25,300	68,000	2.82	3.15
May	29,800	12,300	19,140	.794	.92
June	16,500	7,390	10,650	.442	.49
July	7,780	3,720	5,220	.217	.25
August	8,800	3,500	5,657	.235	.27
September	9,800	3,050	4,765	.198	.22
The year	691,000	3,050	37,500	1.56	21.17

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.</th
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SUSQUEHANNA RIVER BASIN

Chemung River at Corning, N. Y.

Location. - Chain gage, lat. $42^{\circ}8'50''$, long. $77^{\circ}3'40''$, at Bridge Street Bridge, at Corning, Steuben County. Zero of gage is 912.82 feet above mean sea level.
Drainage area. - 2,010 square miles.
Records available. - December 1909 to September 1936.
Extremes. - Maximum gage height observed during year, 19.3 feet Mar. 12; minimum, 1.9 feet July 20-23, July 28 to Aug. 5, Sept. 16-18, 27-30.
1909-36: Maximum gage height, 20.1 feet July 8, 1935; minimum, 1.8 feet Sept. 2, 3, 1921.
Maximum stage known prior to construction of dikes, 20.0 feet June 1, 1889.
Remarks. - Records good. Gage not read Dec. 25, July 4. Gage heights are obtained at this station for flood-warning purposes. Discharge is not determined.

Daily gage height in feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	3.6	3.2	4.0	3.3	5.4	6.7	4.0	2.8	2.2	1.9	2.3
2	2.8	3.3	3.1	4.1	3.3	5.0	6.1	3.9	2.7	2.2	1.9	2.2
3	3.1	3.1	3.1	3.7	3.3	4.6	6.7	6.0	2.7	2.1	1.9	2.2
4	2.9	3.0	3.1	3.6	3.3	6.0	5.7	4.8	2.6	2.1	1.9	2.2
5	2.8	2.9	3.0	3.7	3.3	8.9	5.4	4.4	2.6	2.1	1.9	2.2
6	2.7	2.9	3.0	3.7	3.3	6.1	5.6	4.2	2.5	2.1	2.0	2.1
7	2.6	2.9	3.0	3.7	3.3	5.3	6.7	3.9	2.4	2.1	2.8	2.1
8	2.5	2.9	3.0	3.5	3.3	5.1	5.9	3.7	2.6	2.1	2.4	2.1
9	2.5	3.1	3.1	3.4	3.3	5.4	5.6	3.5	2.6	2.0	2.2	2.0
10	2.5	3.0	5.0	3.4	3.3	6.6	5.5	3.4	2.5	2.0	2.2	2.0
11	2.5	2.9	4.3	3.4	3.3	10.9	6.0	3.3	2.5	2.0	2.1	2.0
12	2.5	2.9	4.2	3.3	3.3	17.5	6.0	3.2	4.2	2.1	2.7	2.0
13	2.5	3.5	4.0	3.3	3.3	10.6	7.8	3.3	5.0	2.2	2.4	2.0
14	2.4	5.6	4.0	3.3	3.3	3.3	7.8	6.4	3.4	2.7	2.1	2.2
15	2.4	4.7	4.9	3.3	3.3	7.6	6.4	3.3	2.7	2.1	2.2	2.0
16	2.4	4.2	6.1	3.4	3.3	12.0	5.7	3.2	2.6	2.0	2.3	1.9
17	2.5	4.1	5.5	3.3	3.3	12.4	5.2	3.1	2.5	2.0	2.3	1.9
18	2.3	4.0	4.6	3.3	3.3	17.3	5.0	3.0	2.4	2.0	2.1	1.9
19	2.3	3.9	4.5	3.3	3.3	13.1	4.9	3.1	2.6	2.0	2.1	1.9
20	2.3	3.9	4.2	3.2	3.3	12.6	4.6	4.0	2.6	1.9	2.2	2.0
21	2.3	3.9	3.7	3.2	3.3	10.2	4.5	3.5	2.5	1.9	2.6	2.0
22	2.3	3.7	3.6	3.2	3.3	8.5	4.9	3.2	2.4	1.9	2.6	2.0
23	2.3	3.5	3.6	5.2	3.3	8.3	4.4	3.1	2.3	1.9	2.6	2.0
24	2.3	3.3	3.4	3.2	3.3	8.0	4.2	3.0	2.3	1.9	2.7	2.0
25	2.3	3.1	3.3	3.3	11.2	4.0	3.0	2.3	2.0	2.7	2.0	2.0
26	2.3	3.1	4.9	3.3	3.9	11.9	3.8	3.0	2.2	2.0	2.4	2.0
27	2.3	3.1	4.3	3.3	6.4	9.2	3.7	2.9	2.2	2.0	2.4	2.0
28	2.3	3.1	4.0	3.3	7.5	10.2	3.6	3.2	2.2	1.9	2.3	1.9
29	2.3	3.1	4.0	3.3	6.0	8.0	3.6	3.0	2.2	1.9	2.2	1.9
30	5.2	3.4	5.9	3.3	7.1	3.9	2.9	2.2	1.9	2.2	1.9	1.9
31	4.2	3.9	3.3	7.8	7.8	2.9	2.2	1.9	2.3	1.9	2.3	1.9

SUSQUEHANNA RIVER BASIN

Towanda Creek near Monroeton, Pa.

Location. - Chain gage, lat. $41^{\circ}42'35''$, long. $76^{\circ}29'0''$, at highway bridge 1½ miles above mouth of South Branch of Towanda Creek and 1½ miles southwest of Monroeton, Bradford County. Zero of gage is 774.14 feet above mean sea level.
Drainage area. - 214 square miles.

Records available. - October 1920 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; January 1914 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 18 years (1914-16, 1920-36), 287 second-feet.

Extremes. - Maximum discharge during year, 15,200 second-feet Mar. 18 (gage height, 10.78 feet, from floodmarks); minimum, 0.9 second-foot Aug. 4.

1914-36: Maximum discharge, about 15,800 second-feet Nov. 16, 1926 (gage height, 11.0 feet, from graph based on gage readings); minimum, 0.7 second-foot Sept. 15, 17, 21, 22, 1932.

Remarks. - Records fair. Discharge for periods of ice effect, Dec. 24 to Jan. 2, Jan. 20 to Feb. 27, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	69	241	102	59	905	360	134	76	26	1.3	20
2	13	50	213	105	58	415	370	125	67	25	1.2	16
3	12	34	182	173	58	310	370	311	59	21	1.2	12
4	12	34	161	365	57	318	302	480	56	29	1.0	10
5	11	32	116	415	56	905	280	330	53	26	1.4	9.0
6	11	50	131	313	56	530	548	284	45	23	33	7.8
7	11	26	113	234	55	415	510	244	40	18	39	5.7
8	11	39	111	199	55	412	420	214	46	14	23	4.9
9	11	43	147	173	55	385	370	190	56	11	15	3.9
10	9.6	35	120	230	55	964	420	166	46	9.6	13	3.6
11	10	33	243	206	55	4,080	450	152	46	12	40	3.3
12	11	32	216	185	54	8,710	420	143	67	16	45	2.8
13	9.6	2,270	135	180	54	3,040	705	120	74	13	23	2.8
14	9.6	1,050	665	234	54	2,040	510	128	98	11	21	2.6
15	9.6	530	740	252	54	2,120	420	118	80	9.0	54	2.5
16	9.6	365	820	132	54	3,740	370	105	63	6.0	39	2.2
17	9.1	295	500	176	54	7,440	330	98	53	5.4	25	3.0
18	9.1	295	340	167	54	9,530	293	89	59	4.9	17	3.0
19	9.1	255	295	123	55	4,170	270	115	57	4.2	13	3.6
20	9.1	665	255	100	55	2,060	248	143	49	3.9	31	3.3
21	9.6	500	220	90	55	2,330	239	105	40	3.6	30	2.6
22	10	390	196	85	56	1,300	257	93	31	3.0	24	2.4
23	12	295	170	80	57	955</td						

SUSQUEHANNA RIVER BASIN

Tunkhannock Creek at Dixon, Pa.

Location.—Chain gage, lat. $41^{\circ}33'30''$, long. $75^{\circ}53'40''$, at highway bridge at Dixon, Wyoming County, 3 miles northeast of Tunkhannock. Zero of gage is 610.50 feet above mean sea level.

Drainage area.—383 square miles.

Records available.—October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; January 1914 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—18 years (1918-36), 540 second-feet.

Extremes.—Maximum discharge during year, 14,900 second-feet Mar. 18 (gage height, 11.36 feet, from floodmarks) from rating curve extended above 5,300 second-feet; minimum, 20 second-feet Aug. 3, 4 (gage height, 0.86 foot).

1914-36: Maximum discharge, 19,100 second-feet Sept. 30, 1924 (gage height, 13.1 feet) from rating curve extended above 5,300 second-feet; minimum, 9.0 second-feet Aug. 12, 1930 (gage height, 0.73 foot).

Remarks.—Records fair. Discharge for periods of ice effect, Dec. 19 to Jan. 4, Jan. 20 to Mar. 10, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Some regulation from storage in natural and artificial lakes and from operation of gristmills upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	1,420	1,220	235	225	715	820	276	90	63	22	82
2	69	750	1,050	240	220	580	970	256	75	53	21	73
3	76	545	820	350	215	480	1,310	236	66	49	21	57
4	59	420	715	600	210	450	820	256	56	50	22	51
5	56	340	512	970	205	450	750	232	54	47	22	54
6	44	1,050	480	820	205	545	1,500	207	51	43	28	44
7	47	450	392	645	200	420	1,220	187	47	40	30	30
8	50	620	450	578	200	420	1,130	184	46	37	39	37
9	47	645	715	578	200	680	970	181	52	38	32	41
10	42	480	820	1,050	200	1,500	1,220	140	47	34	23	40
11	43	480	895	705	195	6,040	1,400	140	43	40	71	34
12	41	420	645	600	195	8,740	1,500	127	56	34	77	31
13	42	7,500	578	610	195	4,490	1,600	121	50	32	56	31
14	43	5,640	578	578	195	2,700	1,500	148	57	31	39	31
15	43	2,480	1,130	512	125	2,440	1,310	137	63	30	63	34
16	30	1,600	1,220	1,700	195	2,590	1,130	111	60	28	26	34
17	41	1,310	895	970	195	5,560	970	90	47	26	57	40
18	36	1,500	680	785	195	11,400	820	100	54	27	51	37
19	41	1,220	540	545	195	8,060	750	153	492	26	33	37
20	36	2,130	450	470	200	5,220	680	256	216	24	51	31
21	36	2,240	390	410	200	4,430	610	161	634	24	69	30
22	36	1,800	330	375	205	3,730	970	119	276	24	102	30
23	39	1,310	300	350	210	2,370	645	100	155	24	102	20
24	53	895	200	330	215	1,930	545	93	155	26	222	27
25	54	820	265	310	220	1,670	455	152	149	26	204	29
26	53	750	255	295	235	1,300	425	114	106	25	134	36
27	43	715	245	280	330	1,480	370	121	88	24	106	32
28	42	1,510	240	235	400	1,830	320	137	82	24	86	32
29	46	3,000	235	255	500	1,220	320	106	77	23	100	31
30	278	1,600	235	245	1,030	298	82	64	22	129	33	
31	3,310	235	235	964	84			21	116			

Month			Maximum	Minimum	Mean	Per square mile	Run-off in inches
October			3,310	36	159	0.415	0.48
November			7,500	340	1,527	3.99	4.45
December			1,220	235	574	1.50	1.73
January			1,700	235	550	1.44	1.66
February			500	195	226	.590	.64
March			11,400	450	2,757	7.20	8.30
April			1,600	298	911	2.38	2.66
May			276	82	155	.405	.47
June			634	43	117	.505	.34
July			63	21	32.9	.086	.10
August			222	21	72.1	.188	.22
September			62	27	30.9	.102	.11
The year			11,400	21	595	1.55	21.16

SUSQUEHANNA RIVER BASIN

Wapwallopen Creek near Wapwallopen, Pa.

Location.—Water-stage recorder, lat. $41^{\circ}3'35''$, long. $76^{\circ}5'25''$, at Harts Bridge, 24 miles southeast of Wapwallopen, Luzerne County, and $\frac{3}{4}$ miles above mouth. Zero of gage is 752.41 feet above mean sea level.

Drainage area.—45.8 square miles.

Records available.—October 1919 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; October 1919 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—16 years (1920-36), 61.5 second-feet.

Extremes.—Maximum discharge during year, 1,540 second-feet Mar. 18 (gage height, 6.58 feet); minimum, 1.8 second-feet Sept. 1 (gage height, 0.80 foot); minimum daily discharge, 2.5 second-feet Sept. 2.

1919-36: Maximum discharge, 2,260 second-feet Sept. 30, 1924 (gage height, 7.9 feet, from graph based on gage readings) from rating curve extended above 1,300 second-feet; minimum, that of Sept. 1, 1936; minimum discharge, that of Sept. 2, 1936.

Remarks.—Records good except those for periods of ice effect and for extremely low stages, which are fair. Discharge for periods of ice effect, Dec. 5-8, Dec. 21 to Mar. 9, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Some regulation at low stages from operation of gristmills upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.7	28	166	56	43	90	88	45	20	24	5.4	5.4
2	10	16	132	58	42	80	107	39	17	19	5.0	2.5
3	11	14	110	170	42	80	103	37	16	18	4.4	3.8
4	7.3	13	95	150	41	90	80	48	15	19	4.0	3.5
5	9.0	11	80	120	41	110	72	40	14	16	4.7	3.3
6	7.5	13	75	105	40	90	231	35	12	14	5.4	3.1
7	8.0	14	70	96	40	75	177	32	12	14	5.8	2.9
8	8.8	13	65	90	39	66	157	31	13	12	6.1	3.1
9	8.4	11	88	39	80	1						

West Branch of Susquehanna River at Bower, Pa.

Location.—Water-stage recorder, lat. $40^{\circ}53'50''$, long. $78^{\circ}40'40''$, at highway bridge at Bower, Clearfield County, 4.8 miles below Mahaffey and mouth of Chest Creek. Zero of gage is 1,206.39 feet above mean sea level.
Drainage area.—315 square miles.
Records available.—October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; October 1913 to September 1936 in reports of Pennsylvania Department of Forests and Waters.
Average discharge.—23 years, 558 second-feet.
Extremes.—Maximum discharge during year, 31,500 second-feet Mar. 18 (gage height, 19.74 feet, from floodmark in gage shelter) from rating curve extended on basis of slope-area determination; minimum, 23 second-feet July 21 (gage height, 3.77 feet).
1913-36: Maximum discharge, that of Mar. 18, 1936; minimum, 16 second-feet Sept. 29, Oct. 1, 6, 13, 1930 (gage height, 3.66 feet).
Remarks.—Records good except those for high stages, which are fair, and those for period of ice effect and for periods of recorder failure, which are poor. Discharge for periods of ice effect, Dec. 5-8, Dec. 23 to Jan. 12, Jan. 21 to Feb. 29, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations downstream. Discharge for periods of recorder failure, Mar. 1-5, Sept. 12-25, determined by comparison with records for stations downstream. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		
1	50	84	136	290	230	1,900	745	208	66	117	42	399		
2	86	71	169	350	220	1,700	882	217	65	78	38	272		
3	70	63	158	600	210	1,500	900	245	58	60	34	226		
4	53	53	137	1,000	220	1,900	709	242	54	54	34	181		
5	47	56	135	750	240	2,750	628	206	51	51	45	135		
6	43	72	140	620	210	2,300	2,150	106	51	49	780	112		
7	40	77	160	660	190	1,900	2,100	174	50	44	262	93		
8	41	100	220	640	175	1,800	1,510	161	61	39	130	84		
9	41	115	1,230	800	180	1,700	1,170	152	103	37	96	77		
10	41	94	1,030	1,300	150	1,930	1,240	143	74	34	67	71		
11	39	84	900	1,100	140	4,010	1,200	135	65	34	58	88		
12	42	112	762	900	135	5,140	1,200	135	125	31	56	74		
13	49	1,830	670	796	130	2,990	1,060	133	185	30	50	64		
14	41	1,070	1,060	997	125	1,930	906	150	32	28	43	66		
15	42	621	1,530	846	130	2,200	799	129	160	28	43	68		
16	41	424	2,200	792	160	3,420	697	114	106	27	93	72		
17	38	329	1,630	670	165	15,900	606	106	82	26	216	60		
18	40	283	1,200	750	160	22,000	541	101	87	26	92	55		
19	42	234	920	1,130	150	6,530	460	148	124	25	562	50		
20	43	255	732	828	135	3,180	404	200	132	24	704	49		
21	40	249	470	700	130	2,410	376	127	84	25	297	42		
22	40	218	404	600	125	1,950	408	106	66	31	174	45		
23	55	181	360	500	122	1,970	348	93	56	29	125	38		
24	61	143	340	450	120	1,780	305	28	57	49	703	40		
25	55	127	320	410	200	1,780	265	95	57	72	468	45		
26	47	153	310	370	1,000	1,510	248	85	53	47	622	52		
27	44	138	300	340	2,500	1,680	233	87	50	75	414	46		
28	40	176	290	310	3,500	1,630	217	82	49	196	239	42		
29	55	252	290	280	2,400	1,230	211	77	60	94	943	80		
30	158	207	280	260	1,100	211	74	118	58	1,020	400			
31	109	280	240	921	70	573			47					
Month				Maximum	Minimum	Mean	Per square mile	Run-off in inches						
October	158	38	52.7	0.167	0.19									
November	1,830	53	262	.032	.03									
December	2,200	135	607	1.03	2.22									
January	1,300	240	654	2.08	2.40									
February	3,500	120	467	1.42	1.60									
March	22,000	921	3,369	10.7	12.34									
April	2,160	211	760	2.41	2.69									
May	245	70	138	.458	.50									
June	362	49	91.0	.299	.32									
July	196	24	50.5	.160	.18									
August	1,020	34	294	.033	1.08									
September	400	38	104	.330	.37									
The year	22,000	24	574	1.82	24.82									

West Branch of Susquehanna River at Renovo, Pa.

Location.—Water-stage recorder, lat. $41^{\circ}18'50''$, long. $77^{\circ}44'45''$, at highway bridge at Renovo, Clinton County. Zero of gage is 634.03 feet above mean sea level.
Drainage area.—2,975 square miles.
Records available.—October 1919 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; July 1895 to December 1903, October 1905 to September 1936 in reports of Pennsylvania Department of Forests and Waters.
Average discharge.—24 years (1908-15, 1919-36), 4,727 second-feet.
Extremes.—Maximum discharge during year, 236,000 second-feet Mar. 18 (gage height, 29.39 feet, from floodmark in gage shelter) from rating curve extended on basis of slope-area determination; minimum, 188 second-feet July 22, 23.
1895-1903, 1905-36: Maximum discharge, that of Mar. 18, 1936; minimum, 80 second-feet Dec. 6, 1908 (gage height, -1.10 feet).
Remarks.—Records good except those for periods of ice effect, Dec. 5-10, Dec. 29 to Jan. 4, Jan. 22 to Mar. 7, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations at Bower and at Williamsport.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	397	915	2,560	2,400	1,300	13,000	10,700	2,870	1,290	1,270	485	2,140
2	465	926	2,470	2,450	1,300	12,000	9,750	2,870	1,210	1,430	360	1,580
3	669	782	2,230	2,600	1,300	10,000	10,500	3,160	1,130	1,170	288	1,310
4	598	669	2,000	3,000	1,250	9,000	9,750	3,450	1,040	974	282	1,070
5	540	590	1,300	5,360	1,250	11,000	8,530	3,450	985	831	317	919
6	494	598	1,200	5,360	1,200	17,000	10,600	3,250	886	730	681	810
7	430	687	1,200	4,500	1,200	14,000	19,700	2,960	842	630	1,230	700
8	404	715	1,500	4,500	1,200	12,500	17,700	2,690	1,210	557	1,310	584
9	367	884	2,000	4,040	1,200	10,900	13,900	2,520	1,560	503	1,060	512
10	349	947	5,000	4,160	1,150	11,700	12,100	2,360	1,590	449	760	476
11	338	958										

West Branch of Susquehanna River at Lock Haven, Pa.

Location.—Chain gage, lat. $41^{\circ}8'20''$, long. $77^{\circ}26'30''$, at Jay Street Bridge, at Lock Haven, Clinton County. Zero of gage is 535.00 feet above mean sea level.

Drainage area.—3,338 square miles.

Records available.—October 1913 to August 1923, August 1925 to September 1936.

Extremes.—Maximum gage height during year, 32.28 feet, from floodmark, Mar. 18; minimum, 0.90 foot July 23.

1913-23, 1925-36: Maximum gage height, that of Mar. 18, 1936; minimum, 0.60 foot Sept. 25, 1932.

Remarks.—Records fair. Gage not read Mar. 6-11, Aug. 23-29. Gage heights are obtained at this station for flood-warning purposes. Discharge is not determined.

Daily mean gage height in feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.20	2.08	3.48	4.88	4.50	16.75	6.62	3.63	2.38	2.10	1.51	8.12
2	1.30	1.88	3.38	4.95	4.52	16.32	6.29	3.59	2.30	2.42	1.42	7.74
3	1.42	1.84	3.25	5.13	4.52	16.15	6.46	3.70	2.19	2.32	1.22	7.48
4	1.61	1.77	3.10	5.37	4.52	15.40	6.29	3.92	2.52	2.09	1.09	7.15
5	1.47	1.63	2.93	5.77	4.52	15.25	6.04	3.89	2.78	1.89	1.12	6.60
6	1.40	1.61	2.75	5.90	4.52	6.14	3.80	2.20	1.78	1.36	6.08	
7	1.32	1.66	2.58	5.44	4.53	7.96	3.64	2.03	1.65	2.11	5.72	
8	1.25	1.82	3.12	5.24	4.53	8.22	3.54	2.24	1.61	2.54	5.40	
9	1.20	1.95	3.45	5.06	4.51	7.34	3.49	2.42	1.46	2.55	5.12	
10	1.14	2.00	4.05	4.98	4.47	6.76	3.30	2.49	1.40	2.08	4.88	
11	1.12	2.17	5.44	4.92	4.43	6.42	3.18	2.52	1.33	1.88	4.65	
12	1.10	2.46	5.19	5.40	4.43	20.51	6.92	3.08	3.74	1.60	1.76	4.48
13	1.08	3.60	5.18	5.44	4.43	16.59	6.79	3.07	3.31	1.47	1.68	4.40
14	1.10	6.26	5.36	5.24	4.43	11.45	6.57	3.14	2.91	1.43	1.52	4.32
15	1.10	6.44	6.20	5.22	4.44	9.42	6.25	3.02	3.08	1.40	1.49	4.29
16	1.08	5.09	7.35	5.57	4.55	9.97	5.95	2.89	3.14	1.28	1.53	4.25
17	1.06	4.49	7.90	5.44	4.54	16.53	5.73	2.78	2.78	1.21	1.70	4.31
18	1.04	4.14	7.15	5.22	4.52	29.54	5.63	2.71	2.57	1.13	1.92	4.34
19	1.02	3.92	6.60	5.13	4.51	25.80	5.25	2.72	3.13	1.04	1.88	4.29
20	1.02	3.58	5.95	5.16	4.51	17.95	4.95	2.85	3.22	.99	1.75	4.40
21	1.04	3.42	5.38	5.21	4.51	12.93	4.73	2.98	2.92	.93	1.83	4.26
22	1.03	3.32	4.90	5.10	4.51	10.55	4.57	3.08	2.78	.95	1.81	4.15
23	1.06	3.16	4.49	4.94	4.48	9.14	4.43	2.99	2.52	.92		4.04
24	1.11	3.00	4.42	4.64	4.44	8.74	4.20	2.92	2.28	1.06		4.00
25	1.20	2.83	4.40	4.34	4.39	8.69	3.97	2.83	2.16	1.09		3.97
26	1.14	2.77	4.78	4.30	4.35	9.94	3.85	2.79	2.06	1.26		3.97
27	1.18	2.81	4.95	4.33	4.39	9.59	3.78	2.72	1.97	1.45		4.00
28	1.22	2.85	5.00	4.37	9.09	9.54	3.66	2.67	1.91	1.39		4.06
29	1.49	3.09	5.00	4.42	18.42	9.14	3.62	2.61	1.86	1.36		4.14
30	1.97	3.02	5.00	4.43		7.92	3.69	2.51	1.84	1.44	7.88	4.43
31	2.26		4.94	4.47		7.19	2.46		1.50	8.12		

West Branch of Susquehanna River at Williamsport, Pa.

Location.—Water-stage recorder, lat. $41^{\circ}14'15''$, long. $76^{\circ}59'55''$, at highway bridge at Williamsport, Lycoming County. Zero of gage is 494.55 feet above mean sea level.

Drainage area.—5,682 square miles.

Records available.—March 1895 to December 1913, October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; March 1895 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—41 years 8,867 second-feet.

Extremes.—Maximum discharge during year, 264,000 second-feet Mar. 18 (gage height, 33.57 feet, from floodmark in gage shelter) from rating extended on basis of slope-area determination; minimum, 610 second-feet Oct. 20.

1895-1936: Maximum discharge, that of Mar. 18, 1936; minimum, 231 second-feet Sept. 12, 13, 1932 (gage height, -0.42 foot); minimum daily discharge, 250 second-feet June 30, July 10, 1912.

Remarks.—Records fair except those for periods of ice effect, Dec. 6-9, Dec. 29 to Jan. 2, Jan. 19 to Mar. 11, which are poor and were determined from gage heights, weather records, and by comparison with records for stations upstream. Slight regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	770	2,760	5,210	3,600	2,500	23,000	23,900	5,780	2,460	1,800	893	3,760
2	840	2,090	4,930	3,800	2,400	24,000	20,900	5,640	2,280	1,920	893	2,970
3	926	1,910	4,660	4,660	2,300	19,000	20,400	6,080	2,090	2,240	850	2,280
4	994	1,320	4,130	5,640	2,200	17,000	19,000	6,940	1,970	2,020	780	1,380
5	1,050	1,450	2,710	6,540	2,100	22,000	17,100	7,000	1,310	1,730	751	1,670
6	970	1,320	2,200	6,340	2,050	31,000	19,300	6,690	1,690	1,530	780	1,450
7	904	1,300	2,200	6,690	2,000	32,000	30,200	6,230	1,610	1,390	1,290	1,300
8	860	1,420	2,600	6,080	1,950	23,000	32,300	5,780	1,610	1,260	1,920	1,210
9	810	1,450	3,500	6,080	1,950	20,000	26,400	5,210	1,930	1,130	1,720	1,090
10	760	1,530	4,930	6,840	1,850	22,000	23,400	4,800	2,390	1,080	1,670	994
11	742	1,590	8,980	5,640	1,800	45,000	21,900	4,520	2,350	1,020	1,460	948
12	715	1,700	10,000	5,930	1,750	145,000	22,400	4,390	3,540	1,040	1,570	904
13	706	12,000	10,000	6,840	1,750	137,000	22,900	4,280	5,070	1,220	1,620	950
14	715	20,900	13,000	6,840	1,700	74,600	21,400	4,130	4,130	1,180	1,330	840
15	697	19,500	14,500	6,380	1,700	47,100						

SUSQUEHANNA RIVER BASIN

Clearfield Creek at Dimeling, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}58'15''$, long. $78^{\circ}24'25''$, at highway bridge at Dimeling, Clearfield County, 400 feet below mouth of Little Clearfield Creek. Zero of gage is 1,145.56 feet above mean sea level.

Drainage area. - 371 square miles.

Records available. - October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; October 1913 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 23 years, 575 second-feet.

Extremes. - Maximum discharge during year, 37,600 second-feet Mar. 18 (gage height, 18.49 feet, from floodmark in gage shelter) from rating curve extended above 6,000 second-feet; minimum, 18 second-feet July 20, Aug. 2 (gage height, 3.26 feet); minimum daily discharge 22 second-feet July 20.

1913-36: Maximum discharge, that of Mar. 18, 1936; minimum, 6 second-feet October 1, 9, 1926 (gage height, 3.15 feet); minimum daily discharge, 7.1 second-October 1, 1925.

Remarks. - Records good except those for extremely high stages and for period of ice effect and recorder failure, which are poor. Discharge for periods of ice effect, Dec. 5-9, Dec. 22 to Feb. 28, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for periods of recorder failure, May 4, 5, 27-30, Aug. 5-12, determined by comparison with records for stations mentioned above. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	74	177	280	250	2,580	888	223	91	190	46	232
2	52	57	146	350	230	2,280	1,110	214	82	181	27	174
3	50	48	126	550	220	1,820	1,200	238	76	113	29	153
4	49	43	93	1,000	230	1,560	914	230	70	92	53	149
5	45	42	110	700	250	2,470	796	222	64	84	525	120
6	42	46	103	600	210	2,530	2,210	214	60	80	395	91
7	38	51	101	640	190	2,130	2,490	198	63	68	175	76
8	56	64	99	600	170	1,570	1,770	184	122	61	100	66
9	37	70	400	700	150	1,490	1,390	172	165	55	70	60
10	37	67	668	1,500	140	2,270	1,510	162	113	49	55	54
11	36	60	657	1,200	130	4,460	1,470	153	96	46	53	52
12	33	62	674	950	125	7,560	1,430	170	113	45	48	54
13	36	1,470	585	750	122	4,520	1,270	165	423	44	41	49
14	37	1,330	966	950	120	2,630	1,100	165	673	44	38	52
15	37	624	1,550	800	120	2,640	955	160	347	37	38	55
16	36	406	2,230	740	125	3,650	842	140	207	33	122	63
17	36	322	1,180	680	160	14,100	739	128	153	32	86	47
18	36	295	1,160	900	150	32,700	657	122	32	67	40	
19	37	253	892	1,200	140	14,600	564	149	454	30	59	36
20	37	239	704	900	130	5,680	481	237	423	22	80	37
21	36	236	468	750	125	3,430	434	192	240	55	110	27
22	36	216	420	650	123	2,670	442	149	177	27	92	34
23	38	182	390	560	121	2,530	406	130	144	27	69	27
24	41	143	360	520	120	2,200	348	119	128	66	190	31
25	39	118	340	480	125	2,090	309	113	119	56	358	39
26	40	144	330	440	800	1,810	283	101	110	90	200	42
27	36	128	320	400	2,200	1,870	263	101	99	97	245	40
28	35	152	310	360	3,200	2,060	244	98	92	131	142	36
29	38	203	300	530	2,810	1,480	233	91	86	145	253	65
30	64	210	290	300	1,290	232	88	188	87	743	485	
31	94		280	270	1,080		94	60	365			
Month				Maximum	Minimum	Mean	Per square mile	Run-off in inches				
October				94	33	41.5	0.112	0.13				
November				1,470	42	245	.660	.74				
December				2,230	93	530	1.43	1.65				
January				1,500	270	679	1.83	2.11				
February				3,200	120	448	1.21	1.30				
March				32,700	1,080	4,379	11.0	13.60				
April				2,490	232	900	2.43	2.71				
May				238	80	159	.429	.49				
June				673	60	180	.485	.54				
July				190	22	68.7	.185	.21				
August				743	27	157	.423	.49				
September				405	27	92.9	.223	.25				
The year				32,700	22	660	1.78	24.22				

SUSQUEHANNA RIVER BASIN

Driftwood Branch of Sinnemahoning Creek at Sterling Run, Pa.

Location. - Staff gage, lat. $41^{\circ}24'30''$, long. $78^{\circ}11'25''$, 800 feet above highway bridge at Sterling Run, Cameron County, and 1,100 feet above mouth of Sterling Run. Zero of gage is 894.60 feet above mean sea level.

Drainage area. - 281 square miles.

Records available. - November 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; September 1913 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 17 years (1919-36), 440 second-feet.

Extremes. - Maximum discharge during year, 28,400 second-feet Mar. 17 (gage height, 12.0 feet, from graph based on gage readings) from rating curve extended on basis of slope-area determination; minimum, 1.8 second-feet July 17 (gage height, 1.05 feet).

1913-36: Maximum discharge, that of Mar. 17, 1936; minimum, 0.4 second-foot Sept. 7, 12-14, 1930.

Remarks. - Records fair except those for periods of ice effect, Dec. 4-7, Dec. 22 to Jan. 4, Jan. 14 to Mar. 5, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Slight regulation from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	137	371	165	98	1,600	723	258	87	153	7.0	54
2	141	120	321	130	96	1,600	940	266	81	71	6.0	39
3	93	105	293	210	96	1,550	940	371	71	49	5.4	36
4	74	96	250	250	98	1,500	847	398	67	34	4.3	28
5	67	93	220	293	90	3,600	684	371	56	28	4.2	23
6	54	151	200	321	86							

SUSQUEHANNA RIVER BASIN

North Bald Eagle Creek at Beech Creek Station, Pa.

Location. - Water-stage recorder, lat. $41^{\circ}3'55''$, long. $77^{\circ}34'0''$, at highway bridge just below mouth of Beech Creek, at Beech Creek Station, Clinton County. Zero of gage is 571.79 feet above mean sea level.

Drainage area. - 559 square miles.
Records available. - October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; June 1910 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 26 years, 791 second-feet.

Extremes. - Maximum discharge during year, 22,300 second-feet Mar. 18 (gage height, 14.42 feet) from rating curve extended above 10,000 second-feet; minimum, 94 second-feet Oct. 12 (gage height, 1.35 feet); minimum daily discharge, 122 second-feet Oct. 12.

1910-36: Maximum discharge, that of Mar. 18, 1936; minimum, 15 second-feet Jan. 9, 1931 (gage height, 1.12 feet); minimum daily discharge (estimated), 25 second-feet Jan. 22, 23, 1931.

Remarks. - Records fair except those for periods of ice effect, Dec. 5-8, Dec. 22 to Jan. 7, Jan. 19 to Feb. 29, which are poor and were determined from gage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Some regulation at low stages from operation of gristmills upstream.

SUSQUEHANNA RIVER BASIN

Pine Creek at Cedar Run, Pa.

Location. - Water-stage recorder, lat. $41^{\circ}31'20''$, long. $77^{\circ}26'55''$, at highway bridge at Cedar Run, Lycoming County, about 2,000 feet below mouth of Cedar Run. Zero of gage is 781.96 feet above mean sea level.

Drainage area. - 604 square miles.

Records available. - October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; July 1918 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 17 years (1919-36), 737 second-feet.

Extremes. - Maximum discharge during year, 30,900 second-feet Mar. 18 (gage height, 11.39 feet) from rating curve extended on basis of slope-area determination; minimum, 35 second-feet Aug. 4 (gage height, 1.04 feet).

1918-36: Maximum discharge, that of Mar. 18, 1936; minimum, 5.1 second-feet Sept. 6, 1929 (gage height, 0.86 foot).

Remarks. - Records good except those for period of recorder failure and for periods of ice effect, which are poor. Discharge for period of recorder failure, Nov. 19-30, determined by comparison with records for stations in adjacent drainage areas. Discharge for periods of ice effect, Dec. 4-13, Dec. 24 to Jan. 4, Jan. 21 to Mar. 11, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations mentioned above.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	136	153	256	350	200	2,300	1,540	528	291	273	162	200
2	165	142	249	350	195	2,030	1,780	514	286	235	168	182
3	156	136	243	420	190	1,660	1,780	535	273	220	157	180
4	145	131	214	650	195	1,420	1,480	521	264	216	163	176
5	139	131	180	600	200	2,700	1,420	487	260	220	176	166
6	139	136	170	460	195	3,240	3,570	468	256	209	234	170
7	133	142	170	400	190	2,680	3,240	449	256	202	229	154
8	133	145	210	383	185	2,360	2,550	430	305	188	183	156
9	133	148	300	377	180	2,210	2,100	418	296	188	172	161
10	131	142	389	424	175	2,950	2,220	406	264	178	178	155
11	136	142	716	418	175	6,000	2,030	395	269	178	277	152
12	122	139	810	412	170	13,100	1,960	468	368	191	212	150
13	128	1,730	733	418	170	8,020	1,900	436	394	191	180	152
14	126	1,040	2,100	462	180	4,590	1,660	442	585	185	169	153
15	126	542	2,220	449	200	3,910	1,540	406	401	182	292	152
16	126	406	2,160	468	250	5,410	1,420	389	355	178	227	155
17	128	383	1,600	449	210	10,800	1,260	377	305	178	270	152
18	126	412	1,310	449	200	18,200	1,150	366	305	175	198	154
19	123	350	1,060	500	190	13,300	1,040	424	350	175	175	144
20	123	324	882	460	180	9,880	957	418	296	175	186	144
21	126	300	693	390	175	7,130	900	366	273	178	186	144
22	126	282	580	360	170	5,170	837	350	256	182	168	140
23	131	260	510	330	170	3,920	734	340	252	182	171	142
24	131	235	470	310	175	3,350	701	335	248	213	254	140
25	133	228	430	290	190	3,040	653	335	243	213	248	148
26	131	248	400	270	250	2,760	630	519	235	195	206	142
27	131	231	380	250	600	2,870	600	335	228	191	186	140
28	131	256	370	240	1,500	2,700	570	340	231	202	180	140
29	191	300	360	230	2,800	2,270	563	319	220	198	283	163
30	269	277	350	220		2,040	549	300	260	188	290	224
31	188		350	210		1,790		300	162	220		

Month			Maximum	Minimum	Mean	Per square mile	Run-off in inches
October			269	122	141	0.252	0.29
November			1,730	131	316	.565	.63
December			2,220	170	673	1.20	1.38
January			650	210	387	.692	.80
February			2,900	170	339	.606	.65
March			18,200	1,420	4,958	8.87	10.23
April			3,570	549	1,444	2.58	2.88
May			535	300	404	.723	.83
June			585	220	294	.526	.59
July			273	175	196	.351	.40
August			292	157	206	.369	.43
September			224	140	158	.283	.32
The year			18,200	122	798	1.43	19.43

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	88	313	448	350	320	780	4,120	587	265	153	54	270
2	172	263	433	350	310	700	3,560	571	248	137	46	232
3	162	234	412	400	310	760	3,140	791	226	108	41	205
4	124	212	390	800	320	900	2,450	970	221	98	37	181
5	107	201	380	1,070	320	1,000	2,120	910	200	94	41	153
6	99	223	370	925	310	850	3,150	860	181	80	634	137
7	92	212	370	903	310	800	3,340	770	176	74	429	124
8	85	223	390	850	310							

SUSQUEHANNA RIVER BASIN

Lycoming Creek near Trout Run, Pa.

Location.—Chain gage, lat. $41^{\circ}25'5''$, long. $77^{\circ}2'0''$, at highway bridge half a mile below mouth of Grays Run and $2 \frac{3}{4}$ miles above Trout Run, Lycoming County. Zero of gage is 693.4 feet above mean sea level.

Drainage area.—173 square miles.

Records available.—October 1919 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; December 1913 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—19 years (1914-16, 1919-36), 260 second-feet.

Extremes.—Maximum discharge during year, 17,000 second-feet Mar. 18 (gage height, 17.34 feet, from floodmarks) from rating curve extended on basis of slope-area determination; minimum, 3.2 second-feet Sept. 27 (gage height, 1.28 feet); minimum daily discharge, 4.0 second-feet Sept. 19-24, 27, 28.

1913-36: Maximum discharge, that of Mar. 18, 1936; minimum, that of Sept. 27, 1936; minimum daily discharge, that of Sept. 19-24, 27, 28, 1936.

Remarks.—Records poor. Discharge for periods of missing gage heights, Oct. 19, Dec. 17-20, June 30, July 29, determined by comparison with records for stations in adjacent drainage area. Discharge for periods of ice effect, Dec. 23 to Jan. 3, Jan. 20 to Feb. 29, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations mentioned above. Discharge for high stages determined from graphs based on twice-daily gage readings.

SUSQUEHANNA RIVER BASIN

Loyalsock Creek at Loyalsock, Pa.

Location.—Water-stage recorder, lat. $41^{\circ}19'25''$, long. $76^{\circ}54'40''$, at highway bridge at Loyalsock, Lycoming County. Zero of gage is 585.63 feet above mean sea level.

Drainage area.—443 square miles.

Records available.—October 1931 to September 1936 in reports of U. S. Geological Survey; July 1925 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—11 years, 696 second-feet.

Extremes.—Maximum discharge during year, 30,300 second-feet Mar. 18 (gage height, 11.58 feet, from floodmark in gage shelter) from rating curve extended above 8,000 second-feet; minimum, 28 second-feet Sept. 19, 22, 24.

1925-36: Maximum discharge, 34,000 second-feet Nov. 16, 1926 (gage height, 12.3 feet) from rating curve extended above 8,000 second-feet; minimum, 16 second-feet Sept. 18, 19, 22-25, 1932 (gage height, 2.57 feet).

Remarks.—Records poor. Discharge for periods of ice effect, Dec. 5-8, Dec. 21 to Jan. 5, Jan. 19 to Mar. 12, determined from gage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Record for period of recorder failure, Apr. 1-16, based on daily gage readings.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	107	221	120	79	253	507	158	73	55	9.9	44
2	20	88	194	120	78	183	526	150	71	36	9.9	35
3	20	75	185	180	80	224	488	346	67	38	11	31
4	25	64	177	267	82	212	397	469	63	33	11	26
5	21	59	163	243	81	367	363	363	56	36	11	22
6	20	75	150	212	80	318	835	314	53	33	23	19
7	18	68	130	185	79	284	745	282	42	28	38	16
8	19	75	137	169	78	285	625	252	50	25	32	14
9	17	77	234	169	78	262	546	231	63	21	23	12
10	17	73	215	180	77	324	546	205	51	21	24	11
11	17	70	256	177	76	2,880	585	180	46	21	65	10
12	19	70	227	166	75	6,590	585	177	197	31	54	9.6
13	19	2,320	221	153	76	2,250	585	164	69	32	38	8.8
14	17	1,470	432	153	78	1,300	507	156	94	28	38	7.2
15	17	615	690	153	80	1,120	450	146	82	27	30	6.4
16	17	478	790	153	79	2,180	432	123	65	23	33	5.6
17	17	388	600	147	78	5,550	380	92	55	19	32	5.6
18	17	346	460	140	77	8,320	346	88	74	17	27	4.8
19	18	322	370	109	76	3,380	330	188	78	18	26	4.0
20	17	326	300	100	75	2,310	298	161	58	16	24	4.0
21	18	346	253	95	74	1,620	267	126	55	15	30	4.0
22	20	292	221	93	73	1,270	267	112	44	15	70	4.0
23	22	256	190	90	73	1,100	228	99	40	17	61	4.0
24	25	203	170	86	74	1,130	208	94	39	17	50	4.0
25	27	188	155	84	78	1,140	194	150	39	14	39	5.6
26	24	185	145	83	85	1,160	180	112	58	12	35	5.6
27	25	177	140	82	110	1,170	133	39	16	30	4.0	
28	24	215	135	82	150	1,020	161	121	39	13	27	4.0
29	30	367	130	82	210	928	158	101	39	14	32	8.8
30	535	250	125	81	696	161	92	45	15	44	9.6	
31	206	120	80	628	82			11	61			

Month			Maximum	Minimum	Mean	Per square mile	Run-off in inches
October			535	17	42.8	0.247	0.28
November			2,320	59	322	1.86	2.08
December			790	120	256	1.48	1.71
January			267	80	137	.792	.91
February			210	73	85.8	.496	.53
March			8,320	183	1,624	9.39	10.83
April			835	158	402	2.32	2.59
May			469	82	176	1.02	1.18
June			197	38	60.8	.351	.39
July			55	11	23.1	.134	.15
August			70	9.9	33.5	.194	.22
September			44	4.0	11.7	.068	.08
The year			8,320	4.0	266	1.54	20.95

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	324	1,120	450	390	1,800	1,100	641	236	168	47	80
2	57	223	930	450	380	1,600	1,030	556	214	157	44	70
3	57	175	798	700	390	1,500	1,280	830	196	150	44	64
4	57	148	700	1,500	400	1,600	1,020	854	172	188	44	56
5	55	130	620	2,000	410	2,200	842	693	157	168	42	49
6	50	130	580	1,660	400	1,900	2,010	594	143	140	54	47
7	45	264	540	1,520	390	1,800	3,620	522	133	120	54	44
8	40	228	520	1,290	380	1,700	2,510	480	129	106	58	42
9	38	212	537	1,250	370	1,700	1,320	424	140			

SUSQUEHANNA RIVER BASIN

Penn Creek at Penns Creek, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}51'35''$, long. $77^{\circ}4'5''$, at bridge on State Highway 104, three-quarters of a mile northeast of Penns Creek, Snyder County. Zero of gage is 506.74 feet above mean sea level.

Drainage area. - 301 square miles.

Records available. - October 1931 to September 1936 in reports of U. S. Geological Survey; October 1929 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes. - Maximum discharge during year, 11,400 second-feet Mar. 18 (gage height, 12.12 feet, from floodmark in recorder shelter) from rating curve extended above 6,000 second-feet; minimum, 11 second-feet Sept. 11 (gage height, 0.83 foot); minimum daily discharge, 29 second-feet Sept. 28.

1929-36: Maximum discharge, 12,900 second-feet Sept. 16, 1934 (gage height, 13.00 feet) from rating curve extended above 6,000 second-feet; minimum, 7.0 second-feet Sept. 27, 1932; minimum daily discharge, 26 second-feet Nov. 28-30, 1930.

Remarks. - Records good except those for extremely high stages, which are fair, and those for periods of ice effect, Dec. 5-9, Dec. 21 to Jan. 5, Jan. 19 to Mar. 6, which are poor and were determined from gage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Regulation from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	153	235	230	170	1,000	833	316	124	122	48	64
2	58	95	224	250	170	950	833	291	106	104	51	54
3	56	89	211	300	170	950	833	283	108	91	54	46
4	57	82	180	400	180	1,000	680	287	105	82	44	51
5	39	82	180	500	190	1,200	627	262	99	100	47	41
6	52	83	180	372	180	1,600	1,750	249	103	98	48	50
7	47	80	170	333	180	1,280	1,580	235	95	85	75	47
8	47	78	170	307	170	1,190	1,320	221	106	73	68	40
9	55	77	180	291	170	1,280	1,180	214	114	73	56	47
10	48	75	214	359	170	1,700	1,360	208	107	65	49	42
11	50	65	393	333	160	4,690	1,360	198	97	64	62	34
12	47	123	400	307	160	8,560	1,280	191	95	70	65	40
13	46	1,930	374	307	160	5,450	1,250	198	106	73	57	38
14	50	1,120	966	303	170	3,510	1,110	256	443	72	54	41
15	44	555	1,180	284	190	2,920	1,040	231	303	67	52	40
16	47	396	1,140	283	200	3,040	965	198	188	58	64	40
17	48	377	932	276	190	6,080	866	182	143	61	55	40
18	44	396	770	260	180	10,200	202	176	146	57	62	33
19	42	346	670	250	170	8,430	740	198	203	51	51	35
20	42	324	582	240	160	6,390	680	221	150	59	56	31
21	48	316	500	230	150	5,350	616	185	117	55	50	37
22	36	287	420	220	150	3,950	577	162	103	79	42	30
23	46	268	370	210	150	2,950	522	156	90	63	52	38
24	57	246	320	200	160	2,400	470	150	106	75	53	33
25	45	228	290	190	180	2,010	400	147	100	78	49	37
26	43	217	260	190	250	1,690	386	147	95	68	59	41
27	45	211	240	180	400	1,560	359	148	89	63	59	30
28	43	235	230	180	600	1,400	337	156	91	71	73	29
29	170	303	220	180	800	1,170	341	137	88	72	61	46
30	764	260	220	180	1,050	333	128	100	55	55	84	87
31	248	220	170		939	132			64	64	75	

Month			Maximum	Minimum	Mean.	Per square mile	Run-off in inches
October			764	36	81.5	0.271	0.31
November			1,930	65	303	1.01	1.13
December			1,180	170	408	1.36	1.57
January			500	170	268	.890	1.03
February			800	150	218	.724	.78
March			10,200	939	3,093	10.3	11.87
April			1,750	333	648	2.82	3.15
May			316	88	131	.671	.77
June			443	88	131	.435	.49
July			122	51	73.2	.243	.28
August			84	42	57.3	.190	.22
September			87	29	42.2	.140	.16
The year			10,200	29	480	1.59	21.76

SUSQUEHANNA RIVER BASIN

Mahantango Creek East near Dalmatia, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}36'40''$, long. $76^{\circ}54'45''$, at highway bridge 2 miles above mouth and $3\frac{1}{2}$ miles south of Dalmatia, Northumberland County. Zero of gage is 400.50 feet above mean sea level.

Drainage area. - 162 square miles.

Records available. - October 1931 to September 1936 in reports of U. S. Geological Survey; October 1929 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes. - Maximum discharge during year, 5,180 second-feet Mar. 12 (gage height, 9.75 feet) from rating curve extended above 3,000 second-feet; minimum, 7.4 second-feet Sept. 28 (gage height, 1.07 feet); minimum daily discharge, 9.7 second-feet Sept. 28.

1929-36: Maximum discharge, 9,850 second-feet Aug. 24, 1933 (gage height, 13.66 feet) from rating curve extended above 3,000 second-feet; minimum, 1.5 second-feet Sept. 21, 1932 (gage height, 0.84 foot).

Remarks. - Records good except those for high stages, which are fair, and those for periods of ice effect, Dec. 5-9, Dec. 22 to Jan. 10, Jan. 21 to Mar. 4, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for period of backwater effect, Mar. 18-21, determined from gage heights and by comparison with records for stations mentioned above. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	53	331	115	220	450	297	132	43	95	16	45
2	22	37	271	120	220	400	295	120	39	80	14	35
3	20	30	217	150	220	450	287	114	37	64	15	32
4	19	27	179	250	230	600	240	137	54	62	13	29
5	17	27	140	500	240	962	217	114	44	56	12	28
6	15	26	130	450	235	820	813	103	36	53	12	22
7	18	26	105	400	230	680	940	95	31	49	13	20
8	17	27	115	350	225	623	740	94	35	43	17	21
9	16	24	132	450	220	733	624	87	34	39	14	19
10	18	22	137	680	220	1,140	700	82				

SUSQUEHANNA RIVER BASIN

Frankstown Branch of Juniata River at Williamsburg, Pa.

Location.—Water-stage recorder, lat. $40^{\circ}27'45''$, long. $78^{\circ}12'0''$, at highway bridge at Williamsburg, Blair County. Zero of gage is 831.78 feet above mean sea level.

Drainage area.—291 square miles.

Records available.—October 1919 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; October 1916 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—17 years (1919-36), 384 second-feet.

Extremes.—Maximum discharge during year, 47,600 second-feet Mar. 18 (gage height, 18.58 feet, from floodmark in gage shelter) from rating curve extended on basis of slope-area determination; minimum, 27 second-feet Sept. 19; minimum daily discharge, 41 second-feet Sept. 20.

1916-36: Maximum discharge, that of Mar. 18, 1936; minimum, 13 second-feet July 24, 1934 (gage height, 0.97 foot); minimum daily discharge (estimated), 31 second-feet Dec. 24, 25, 1930.

Maximum stage known, 19.1 feet, from floodmark, June 1, 1889 (discharge, about 35,500 second-feet).

Remarks.—Records fair. Discharge for period of missing gage height record, Jan. 24-29, determined by comparison with records for station in adjacent drainage areas. Regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	.33	74	103	149	131	2,350	804	247	122	143	69	122
2	65	71	104	145	133	1,790	1,020	234	115	122	66	104
3	64	70	97	205	168	1,170	958	249	110	112	62	143
4	59	70	80	306	172	1,200	813	244	107	114	64	112
5	60	69	57	301	176	2,900	749	222	107	107	74	97
6	61	71	102	244	157	2,650	3,180	212	108	90	137	89
7	63	73	91	246	155	1,790	2,120	203	112	74	93	94
8	63	85	95	249	149	1,450	1,450	190	120	73	74	76
9	63	78	154	277	149	1,490	1,270	175	127	70	67	72
10	60	70	191	442	145	2,040	1,750	173	122	68	63	68
11	60	74	248	377	142	3,960	1,390	167	132	72	62	67
12	64	79	244	346	140	6,780	1,280	173	202	68	62	68
13	64	917	253	343	142	3,400	1,120	175	158	69	61	79
14	66	304	1,050	439	144	1,970	1,000	136	198	63	125	92
15	63	234	925	377	164	1,970	954	158	152	66	100	75
16	63	181	980	380	191	2,290	856	151	110	65	80	67
17	61	172	642	358	204	11,600	771	152	101	66	67	81
18	61	168	480	372	207	25,000	706	151	110	65	59	62
19	59	142	400	401	178	10,900	664	175	335	65	65	62
20	61	138	343	283	187	4,210	623	169	160	65	116	41
21	62	135	196	412	181	3,900	583	147	125	65	85	63
22	60	124	188	403	172	2,350	564	133	104	69	120	64
23	57	114	236	219	162	1,750	503	130	96	67	86	57
24	67	98	227	210	162	1,540	458	125	97	157	200	58
25	56	100	193	250	172	1,460	378	125	103	102	110	65
26	64	107	152	260	581	1,400	297	125	99	72	89	65
27	63	101	144	250	1,770	1,750	288	143	97	187	133	56
28	65	111	150	240	2,430	1,550	277	147	103	190	100	52
29	94	133	145	250	2,120	1,230	268	130	108	101	404	127
30	126	117	144	222	1,120	260	127	110	86	389	295	
31	85	158	211	1,013	1,013	1,013	125	75	164			

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	126	56	66.2	0.227	0.26
November	917	69	146	.502	.56
December	1,050	57	277	.952	1.10
January	442	145	295	1.01	1.16
February	2,430	140	303	1.32	1.42
March	25,000	1,010	3,561	12.2	14.07
April	3,180	260	914	3.14	3.50
May	249	125	170	.584	.67
June	335	96	128	.440	.49
July	190	65	90.7	.312	.36
August	404	59	111	.381	.44
September	295	41	85.4	.293	.33
The year	25,000	41	522	1.79	24.36

SUSQUEHANNA RIVER BASIN

Juniata River at Newport, Pa.

Location.—Water-stage recorder, lat. $40^{\circ}28'45''$, long. $77^{\circ}7'45''$, at highway bridge at Newport, Perry County, 1,000 feet above mouth of Little Buffalo Creek.

Zero of gage is 363.16 feet above mean sea level.

Drainage area.—3,354 square miles.

Records available.—March 1899 to December 1913, October 1918 to September 1921, October 1923 to September 1926, October 1931 to September 1936 in reports of U. S. Geological Survey; March 1899 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—35 years (1899-1905, 1907-36), 4,436 second-feet.

Extremes.—Maximum discharge during year, 215,000 second-feet Mar. 19 (gage height, 34.24 feet, from floodmark in gage shelter) from rating curve extended on basis of slope-area determination; minimum, 280 second-feet Oct. 26 (gage height, 2.72 feet); minimum daily discharge, 310 second-feet Oct. 26.

1899-1936: Maximum discharge, that of Mar. 19, 1936; minimum (estimated), 260 second-feet Aug. 27, 1925 (gage height, 2.71 feet); minimum daily discharge, 286 second-feet Sept. 25, 1932.

Maximum stage known, 35.9 feet, from floodmarks, June 1, 1889 (discharge, about 237,000 second-feet).

Remarks.—Records fair. Discharge for periods of ice effect, Dec. 29 to Jan. 15, Jan. 24 to Feb. 29, determined from gage heights, weather records, and by comparison with records for stations upstream. Discharge for period of recorder failure, Apr. 1-9, based on twice-daily gage readings. Slight regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	554	1,480	1,560	1,270	2,150	21,700	8,460	3,320	1,340	1,340	1,650	3,780
2	567	1,130	1,440	1,240	2,100	19,600	7,860	3,110	1,300	1,220	1,210	2,410
3	644	950	1,250	1,220	2,050	17,000	8,160	3,060	1,260	1,300	1,050	1,760
4	592	823	1,200	1,200	2,000	13,200	7,560	3,240	1,170	1,370	894	1,410
5	567	747	1,030	2,000	1,950	15,300	6,690	3,110	1,130	1,390	720	1,170
6	592	644	1,050	3,500	1,900	24,900	12,700	3,090	1,050	1,320	814	1,050
7	541	651	1,230	3,000	1,860	21,300	24,900	2,930	1,030	1,		

SUSQUEHANNA RIVER BASIN

Shaver Creek near Petersburg, Pa.

Location.- Chain gage, lat. $40^{\circ}36'40''$, long. $78^{\circ}0'25''$, at highway bridge $3\frac{1}{2}$ miles northeast of Petersburg, Huntingdon County, and $4\frac{1}{2}$ miles above mouth. Zero of gage is 691.38 feet above mean sea level.

Drainage area.- 46.4 square miles.

Records available.- October 1931 to September 1936 in reports of U. S. Geological Survey; October 1929 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during year, 3,420 second-feet Mar. 18 (gage height, 9.32 feet, from floodmark) from rating curve extended above 750 second-feet; minimum, 2.4 second-feet Oct. 4 (gage height, 0.56 foot).

1929-36: Maximum discharge, that of Mar. 18, 1936; minimum, 0.9 second-foot Sept. 19, 1932 (gage height, 0.46 foot).

Remarks.- Records fair except those for periods of ice effect, Dec. 21 to Jan. 12, Jan. 19 to Mar. 7, which are poor and were determined from gage height, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.5	5.6	16	34	18	500	76	29	11	26	3.5	6.0
2	5.6	5.6	14	40	17	410	114	25	10	12	3.0	5.6
3	4.6	5.3	16	50	16	380	86	43	9.2	16	3.0	5.6
4	3.0	4.6	14	78	15	400	71	37	9.2	11	3.0	5.1
5	3.0	5.1	16	73	15	600	70	30	7.4	8.8	4.0	4.6
6	4.3	6.3	16	67	15	500	698	24	8.1	8.5	39	4.0
7	4.3	5.6	15	66	16	400	257	20	7.0	7.0	7.4	4.0
8	4.0	8.5	13	72	17	215	168	20	11	6.3	5.6	4.0
9	3.8	6.3	24	80	18	294	146	19	8.8	5.3	3.8	4.0
10	3.5	5.1	21	90	20	380	257	20	7.8	6.0	3.0	3.0
11	3.5	5.3	114	100	24	1,080	210	27	10	4.8	17	3.5
12	4.0	8.5	66	65	29	1,350	176	196	9.7	7.8	7.0	3.3
13	3.3	265	65	50	37	554	146	316	285	5.6	5.3	5.6
14	4.0	58	320	44	47	324	126	126	218	5.6	4.3	4.6
15	3.5	30	219	44	60	317	102	74	66	5.6	5.1	4.0
16	3.3	20	160	42	52	361	91	53	42	5.1	8.5	4.0
17	3.5	22	102	42	47	1,480	76	45	29	5.6	4.8	4.0
18	4.6	29	81	51	44	2,040	66	39	32	5.1	4.0	3.8
19	4.0	20	71	80	42	1,360	62	81	39	4.6	3.5	3.5
20	3.5	18	58	65	41	695	62	45	25	3.8	6.3	3.5
21	3.8	16	50	58	41	714	58	34	17	3.0	4.3	4.0
22	4.6	14	41	52	42	306	50	29	16	4.0	4.3	3.8
23	4.6	12	36	47	44	208	44	26	15	4.0	4.0	3.5
24	4.3	14	32	43	47	165	38	24	15	12	18	3.8
25	4.6	16	29	38	55	138	38	21	14	5.6	6.3	4.6
26	4.8	12	27	35	80	113	37	18	10	4.0	5.1	4.3
27	4.8	11	26	32	185	216	35	24	9.2	20	4.0	3.0
28	5.1	16	26	28	210	149	33	18	11	7.8	5.7	3.0
29	16	28	27	25	340	113	33	16	10	4.8	6.5	8.5
30	9.7	13	28	23	99	28	15	33	4.3	16	20	
31	7.8	30	20	84				12	4.0	8.1		

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	16	3.0	4.74	0.102	0.12
November	265	4.6	22.9	.494	.55
December	320	13	57.2	1.23	1.42
January	100	20	52.7	1.14	1.31
February	340	15	56.3	1.21	1.30
March	2,040	84	514	11.1	12.80
April	698	28	115	2.48	2.77
May	316	12	48.6	1.05	1.21
June	285	7.0	33.2	.716	.80
July	26	3.0	7.55	.163	.19
August	65	3.0	9.09	.196	.23
September	20	3.0	4.81	.104	.12
The year	2,040	3.0	77.7	1.67	22.82

SUSQUEHANNA RIVER BASIN

Standing Stone Creek near Huntingdon, Pa.

Location.- Water-stage recorder, lat. $40^{\circ}31'25''$, long. $77^{\circ}58'15''$, at bridge on State Highway 545, $3\frac{1}{2}$ miles northeast of Huntingdon, Huntingdon County, and $3\frac{1}{2}$ miles above mouth. Zero of gage is 617.81 feet (revised) above mean sea level.

Drainage area.- 128 square miles.

Records available.- October 1931 to September 1936 in reports of U. S. Geological Survey; October 1929 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during year, 5,070 second-feet Mar. 18 (gage height, 9.14 feet) from rating curve extended above 1,300 second-feet; minimum, 10 second-feet Sept. 20.

1929-36: Maximum discharge, that of Mar. 18, 1936; minimum, 2.8 second-feet Feb. 11, 1931 (gage height, 0.64 foot); minimum daily discharge, 7.6 second-feet Sept. 12-14, 18-26, 1932.

Maximum stage known, 9.38 feet, from floodmark, June 1, 1889 (discharge, about 5,430 second-feet).

Remarks.- Records good except those for extremely high stages and for periods of ice effect, which are fair. Discharge for periods of ice effect, Dec. 5-7, Dec. 21 to Mar. 10, determined from gage heights, weather records, two discharge measurements, and by comparison with records for stations in adjacent drainage areas. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	26	48	85	57	500	344	141	70	99	18	25
2	21	23	45	90	56	490	344	135	64	58	17	22
3	22	21	39	100	55	520	335	141	60	46	16	22
4	19	20	34	115	55	580	293	135	57	45	16	19
5	17	21	32	185	54	650	264	120	53	39	16	16
6	19	21	31	177	54	750	1,200	115	50	37	91	14
7	20	23	33	175	54	500	761	106	48	32	52	13
8	20	24	37	176	54	460	540	104	55	28	23	14
9	19	26	49	182	54	470	472	96	62	26	17	12
10	20	23	60	290	55	700	710	94	52	28	17	12
11	18	21	158	265	57	1,610	635	94	60	27	69	12
12	19	22	200	225	60	2,490	545	445	62	28	28	12
13	20	346	15									

SUSQUEHANNA RIVER BASIN

Raystown Branch of Juniata River at Saxton, Pa.

Location.—Water-stage recorder, lat. $40^{\circ}12'55''$, long. $78^{\circ}15'55''$, at highway bridge half a mile west of Saxton, Bedford County. Zero of gage is 794.73 feet above mean sea level.

Drainage area.—756 square miles.

Records available.—October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; August 1911 to September 1936 in reports of Pennsylvania Department of Forests and Waters. Records prior to October 1931 obtained at a site 0.8 mile downstream.

Average discharge.—25 years, 936 second-feet.

Extremes.—Maximum discharge during year, 80,500 second-feet Mar. 18 (gage height, 24.54 feet, from floodmark in gage shelter) from rating curve extended on basis of slope-area determination; minimum, 94 second-feet July 23 (gage height, 1.12 feet); minimum daily discharge, 103 second-feet July 19.

1911-36: Maximum discharge, that of Mar. 18, 1936; minimum, 52 second-feet Oct. 17, 18, 1930.

Remarks.—Records good except those for high stages, which are fair, and those for period of ice effect, Dec. 24 to Feb. 28, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	134	250	256	370	470	6,180	1,640	527	235	189	280	581
2	140	194	228	360	450	5,270	1,530	497	224	209	219	431
3	127	171	215	360	420	3,560	1,480	497	214	219	180	356
4	127	153	226	350	460	3,070	1,280	666	203	198	158	310
5	124	153	256	780	450	6,770	1,150	596	189	176	158	292
6	127	147	291	700	440	6,950	4,480	504	184	166	193	246
7	124	144	205	660	430	5,100	7,490	482	176	150	235	209
8	130	153	224	640	420	3,750	4,450	445	184	146	246	189
9	127	150	224	700	410	3,680	3,140	417	224	139	219	180
10	130	157	240	800	400	5,100	3,650	396	224	136	176	166
11	134	157	353	1,400	390	9,070	3,140	375	224	128	153	158
12	144	164	365	1,000	380	16,900	2,860	375	659	125	159	150
13	134	458	424	900	370	11,300	2,460	396	895	122	132	153
14	134	1,700	995	900	400	5,660	1,970	417	904	122	136	158
15	144	962	2,460	1,000	460	4,310	1,740	396	528	118	132	153
16	140	643	2,720	970	650	5,660	1,530	362	362	115	136	184
17	134	523	2,310	930	700	16,500	1,300	342	286	115	128	166
18	127	508	1,580	880	660	58,600	1,180	323	320	112	128	158
19	124	471	1,210	840	620	20,700	1,070	330	642	103	158	150
20	124	403	972	800	580	9,860	976	330	632	106	176	136
21	112	378	656	760	560	7,580	898	350	380	109	173	136
22	124	352	646	720	540	5,250	831	275	292	112	342	136
23	134	318	700	690	520	3,850	789	269	246	106	288	128
24	127	280	620	660	510	3,200	707	257	224	156	246	132
25	121	246	530	630	540	3,470	651	251	209	145	184	142
26	124	246	498	600	1,000	2,860	612	240	209	170	158	136
27	124	251	450	570	6,000	2,760	596	251	198	410	932	128
28	118	246	420	540	9,000	3,210	573	251	194	536	525	128
29	171	241	400	520	6,760	2,520	573	269	184	682	1,060	128
30	215	256	390	500	2,190	558	263	176	481	1,580	139	
31	266	380	480	1,900	246	58,600	1,198	443	931			

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	266	112	138	0.183	0.21
November	1,700	144	349	.462	.52
December	2,720	205	692	.915	1.05
January	1,400	350	710	.939	1.08
February	9,000	370	1,207	1.60	1.73
March	58,600	1,900	7,960	10.5	12.11
April	7,490	558	1,843	2.44	2.72
May	666	240	375	.493	.57
June	904	176	328	.434	.48
July	682	103	201	.266	.31
August	1,560	128	319	.422	.49
September	581	128	195	.258	.29
The year	58,600	103	1,198	1.58	21.56

SUSQUEHANNA RIVER BASIN

Dunning Creek at Yount, Pa.

Location.—Chain gage, lat. $40^{\circ}3'30''$, long. $78^{\circ}28'30''$, at highway bridge at Yount, Bedford County, 3 miles above mouth and 34 miles northeast of Bedford. Zero of gage is 1,046.43 feet above mean sea level.

Drainage area.—191 square miles.

Records available.—October 1931 to September 1936 in reports of U. S. Geological Survey; November 1929 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes.—Maximum discharge during year (estimated), 17,900 second-feet Mar. 18 (gage height, 18.08 feet, from floodmark affected by backwater from Raystown Branch of Juniata River); minimum, 13 second-feet July 17, 19 (gage height, 0.49 foot).

1929-36: Maximum discharge, that of Mar. 18, 1936; minimum, 4.9 second-feet July 28, 1930 (gage height, 0.46 foot).

Remarks.—Records fair except those for high stages and for period of ice effect, which are poor. Discharge for period of ice effect, Dec. 22 to Feb. 29, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for period of backwater effect, Mar. 17-19, determined by comparison with records for stations mentioned above. Discharge for high stages determined from graphs based on twice-daily gage readings. Slight regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	29	34	61	112	127	2,090	370	99	40	45	30	132
2	30	32	58	110	125	1,220	370	92	38	34	26	96
3	30	30	50	108	123	800	326	105	37	26	24	106
4	28	29	47	121	121	820	273	99	36	25	22	74
5	28	28	55	300	119	1,900	248	89	33	22	25	57
6	33	28	54	270	117	1,740	2,700	82	32	22	92	50
7	31	29	60	250	115	1,170	1,680	79	34	20	51	44
8	31	38	54	240	113	982	935	74	40	19	32	40
9	30	33	117	300	111	1,120	692	71	48	18	25	37

SUSQUEHANNA RIVER BASIN

Brush Creek at Gapsville, Pa.

Location.- Water-stage recorder, lat. $39^{\circ}57'20''$, long. $78^{\circ}15'15''$, at highway bridge three-quarters of a mile northwest of Gapsville, Bedford County, and 5½ miles above confluence with Shaffer Creek. Zero of gage is 1,122.39 feet above mean sea level.

Drainage area.- 36.8 square miles.

Records available.- October 1931 to September 1936 in reports of U. S. Geological Survey; November 1929 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during year, 3,520 second-feet Mar. 17 (gage height, 9.81 feet) from rating curve extended above 1,500 second-feet; minimum, 0.3 second-foot Sept. 20, 27.

1929-36: Maximum discharge, that of Mar. 17, 1936; minimum, 0.2 second-foot Aug. 28, Sept. 12, 20-23, 1932.

Remarks.- Records fair except those for period of recorder failure and for periods of ice effect, which are poor. Discharge for period of recorder failure, Nov. 8-13, determined by comparison with records for stations in adjacent drainage areas. Discharge for periods of ice effect, Dec. 21 to Jan. 9, Jan. 20 to Feb. 27, determined from gage heights, weather records, and by comparison with records for stations mentioned above. Regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	11	11	26	18	269	58	23	8.3	5.1	8.3	3.8
2	4.2	10	7.7	27	17	207	58	23	7.0	3.5	4.7	3.1
3	1.4	10	8.8	52	18	171	55	36	5.8	3.1	4.4	3.3
4	3.3	7.6	10	55	21	266	46	36	5.5	2.4	4.4	2.9
5	1.8	8.3	7.8	50	19	314	41	28	5.1	2.6	3.3	2.1
6	3.1	7.9	8.4	45	18	301	375	27	4.7	2.1	5.5	1.8
7	4.0	8.1	7.6	45	17	237	368	25	5.1	2.0	8.3	2.0
8	3.3	11	14	40	16	195	285	25	7.0	1.5	5.5	2.0
9	2.7	10	11	60	15	218	233	24	5.8	1.5	5.1	.6
10	1.9	9	11	98	15	285	212	23	5.1	1.5	3.5	2.0
11	2.3	8	16	67	14	646	192	21	11	1.6	3.1	1.0
12	4.9	9	16	59	14	855	169	21	19	1.2	3.3	.9
13	2.2	70	30	57	14	519	144	23	10	1.2	3.6	.7
14	3.7	47	125	57	20	297	125	25	7.3	.9	5.3	1.8
15	2.8	34	129	55	50	242	116	23	5.5	.9	2.6	2.0
16	2.8	27	138	63	45	232	96	20	4.7	1.2	2.6	.4
17	1.8	27	99	55	41	1,630	84	19	3.5	.9	3.1	1.7
18	2.9	28	75	52	37	1,780	72	22	7.7	.9	2.1	.6
19	4.5	26	59	52	34	820	62	26	16	.9	13	.9
20	1.8	23	48	45	32	442	55	18	6.6	.9	7.7	.3
21	3.1	20	43	40	31	375	50	16	4.7	.9	2.9	.4
22	3.8	18	40	36	30	241	47	15	3.6	.6	.4	.8
23	4.1	16	36	33	29	171	41	13	3.1	.6	.5	.9
24	3.7	15	33	30	32	149	38	13	3.5	1.2	1.5	1.2
25	3.7	14	31	27	45	127	34	11	4.4	2.9	1.5	.6
26	2.1	13	30	25	300	103	33	11	3.3	1.7	55	1.7
27	2.0	12	29	23	350	105	31	14	2.9	40	62	.3
28	4.1	13	28	22	550	93	28	13	2.6	24	6.2	.5
29	2.3	14	27	21	402	81	27	11	2.4	17	34	.4
30	2.7	12	27	20	291	73	26	11	2.9	18	16	.9
31	1.4	26	19	68				9.6	13		7.0	

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	27	1.4	4.79	0.130	0.15
November	70	7.6	18.0	.489	.55
December	138	7.6	38.1	1.04	1.20
January	98	19	43.7	1.19	1.37
February	550	14	75.3	2.05	2.21
March	1,780	68	372	10.1	11.64
April	375	26	107	2.90	3.24
May	36	9.6	20.2	.549	.63
June	19	2.4	6.14	.167	.19
July	40	.6	5.03	.137	.16
August	62	.4	9.11	.248	.29
September	3.8	.3	1.39	.038	.04
The year	1,780	.3	58.5	1.59	21.67

SUSQUEHANNA RIVER BASIN

Great Trough Creek near Marklesburg, Pa.

Location.- Water-stage recorder, lat. $40^{\circ}21'0''$, long. $78^{\circ}7'50''$, at highway bridge half a mile above mouth and 3 miles southeast of Marklesburg, Huntingdon County. Zero of gage is 714.48 feet above mean sea level.

Drainage area.- 84.6 square miles.

Records available.- October 1931 to September 1936 in reports of U. S. Geological Survey; January 1930 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes.- Maximum discharge during year, 9,580 second-feet Mar. 17 (gage height, 8.46 feet) from rating curve extended above 500 second-feet; minimum, 3.5 second-feet Sept. 28 (gage height, 0.59 foot).

1930-36: Maximum discharge, that of Mar. 17, 1936; minimum, 0.6 second-foot Sept. 22, 23, 1932, Sept. 3, 1934.

Remarks.- Records good except those for high stages and for period of ice effect, which are poor. Discharge for period of ice effect, Dec. 24 to Feb. 28, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.6	19	32	39	31	670	190	50	18	25	9.6	17
2	8.0	16	30	41	30	502	190	48	17	18	8.0	13
3	9.4	14	27	70	29	375	182	50	16	16	6.7	15
4	7.8	13	22	130	29	430	144	56	14	31	6.2	13
5	6.8	12	23	100	30	656	131	52	14	16	6.6	9.7
6	8.2	12	25	70	29	602	588	46	13	13	7.5	8.0
7	8.8	12	24	65	28	470	583	42	12	11	7.9	7.1
8	8.2	12	25	60	27	389	454	38	13	9.6	8.0	6.4
9	8.2	16	32	75	26	454	381	38	15	8.8	6.4	5.8
10	7.8	14	36	180	25	682	537	37	14	8.2	5.3	5.8
11	7.2	13	43	130	24	1,410	448	38	15	7.5	5.1	5.1
12	7.0	13	52	110	23	2,730	381	52	18	6.7	9.4	5.1
13	8.2	105	59	100	23	1,150	326	46	18	6.2	8.0	6.2
14	7.4	116	296	115	27	676	273	48	31	6.9	6.0</	

SUSQUEHANNA RIVER BASIN

Aughwick Creek near Orbisonia, Pa.

Location.—Chain gage, lat. $40^{\circ}12'35''$, long. $77^{\circ}55'30''$, at highway bridge 600 feet above East Broad Top Railroad bridge, 650 feet above mouth of Three Springs Creek, and 24 miles southwest of Orbisonia, Huntingdon County. Zero of gage is 619.04 feet above mean sea level.

Drainage area.—174 square miles.

Records available.—October 1931 to September 1936 in reports of U. S. Geological Survey; May 1915 to February 1916, January 1920 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes.—Maximum discharge during year, 16,400 second-feet Mar. 18 (gage height, 19.16 feet, from floodmark) from rating curve extended above 10,500 second-feet; minimum, 5.5 second-feet July 20, 21 (gage height, 1.51 feet).

1915-16, 1930-36: Maximum discharge, that of Mar. 18, 1936; minimum, 3.8 second-feet Sept. 25-27, 1932.

Maximum stage known, 20.5 feet, from floodmark, June 1, 1889 (discharge, 18,400 second-feet from rating curve extended above 10,500 second-feet).

Remarks.—Records fair except those for period of ice effect, Dec. 23 to Mar. 4, which are poor and were determined from gage heights, weather records, two discharge measurements, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Some regulation at low stages from operation of gristmills upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	50	40	68	111	950	317	117	32	35	27	50
2	18	38	37	67	108	950	346	107	32	31	18	36
3	19	32	32	66	105	750	361	113	30	34	16	36
4	20	29	28	110	102	900	262	155	27	61	15	31
5	18	27	40	200	100	1,710	249	123	25	42	17	22
6	18	26	37	220	98	2,110	2,250	101	22	25	20	16
7	18	25	43	200	96	1,030	1,470	93	22	20	32	15
8	20	23	32	190	94	809	985	90	31	19	24	14
9	18	32	37	220	92	907	810	86	44	16	17	13
10	17	28	42	300	90	1,360	940	78	40	14	15	12
11	17	26	66	450	89	2,900	810	73	44	14	26	11
12	18	29	126	350	4,650	652	75	63	11	27	10	
13	19	536	103	260	90	2,380	541	142	317	10	18	12
14	20	433	1,180	260	100	1,320	439	138	149	9.8	15	13
15	18	222	930	320	120	1,000	407	95	59	9.2	11	13
16	18	146	835	290	160	930	346	80	42	8.6	9.8	13
17	18	119	562	270	150	5,570	303	73	36	7.3	9.2	11
18	17	109	405	250	140	10,600	276	68	45	6.7	7.3	9.8
19	16	149	306	230	135	4,210	249	75	284	6.1	8.6	8.6
20	17	128	222	210	130	2,020	224	101	98	5.5	9.2	7.3
21	20	102	119	190	127	1,900	199	69	52	5.5	13	7.3
22	24	86	102	180	125	1,220	187	57	35	8	75	7.3
23	22	77	110	170	124	849	164	54	28	16	54	6.7
24	22	56	100	160	128	714	151	47	31	17	26	8.6
25	22	38	95	150	140	637	138	44	34	19	18	8.6
26	22	56	90	140	600	436	132	41	34	18	15	7.3
27	24	46	85	135	2,000	561	127	41	26	40	75	7.3
28	25	42	81	130	2,700	518	119	44	25	123	62	7.3
29	56	50	77	125	1,400	447	113	41	22	115	340	6.7
30	242	48	73	120	410	109	35	21	201	232	8.6	
31	76	70	115	360	34	93	54	93				

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	242	16	29.5	0.170	0.20
November	536	25	96.8	.556	.62
December	1,180	28	200	1.15	1.33
January	450	66	201	1.16	1.34
February	2,700	88	329	1.89	2.04
March	10,600	360	1,779	10.2	11.76
April	2,250	109	456	2.62	2.92
May	155	34	80.3	.461	.53
June	317	21	58.3	.335	.37
July	201	5.5	32.3	.186	.21
August	340	7.3	43.4	.249	.29
September	50	6.7	14.3	.082	.09
The year	10,600	5.5	278	1.60	21.70

SUSQUEHANNA RIVER BASIN

Tuscarora Creek near Port Royal, Pa.

Location.—Water-stage recorder, lat. $40^{\circ}30'55''$, long. $77^{\circ}25'10''$, at highway bridge 2 miles southwest of Port Royal, Juniata County. Zero of gage is 419.80 feet above mean sea level.

Drainage area.—214 square miles.

Records available.—October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; August 1911 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—25 years, 263 second-feet.

Extremes.—Maximum discharge during year (estimated), 14,400 second-feet Mar. 18; maximum gage height, 21.60 feet, from floodmark affected by backwater from Juniata River, Mar. 19; minimum discharge, 4.8 second-feet Sept. 25 (gage height, 2.30 feet); minimum daily discharge, 8.8 second-feet Sept. 20.

1911-36: Maximum discharge, that of Mar. 18, 1936; maximum gage height, that of Mar. 19, 1936; minimum discharge, 1 second-foot Aug. 31, Sept. 4-6, 14, 18, 1913, Sept. 21, 1914.

Remarks.—Records fair except those for periods of ice effect and for period of backwater and missing gage record, which are poor. Discharge for periods of ice effect, Dec. 26 to Jan. 3, Jan. 21 to Mar. 5, determined from gage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Discharge for period of backwater and missing gage record, Mar. 18-30, determined from weekly gage readings and a comparison with records for stations mentioned above. Regulation at medium and low stages from operation of gristmills upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	156	114	120	170	1,800	366	162	59	69	47	50
2	26	118	108	125	155	1,500	407	150	49	59	22	40
3	37	91	95	160	160	1,100	467	218	43	103	28	32
4	25	80	73	450	165	1,000	348	227	42	185	29	34
5	31	71	436	165	1,400	315	168	39	108	30	32	
6	18	64	89	307	160	1,450	1,930	150	41	81	44	18
7	36	58	61	330	160	1,060	1,570	140	28	55	30	23
8	23	60	84	309	155	860	1,040	132	55	44	28	20
9	23	66	107	315	155	960	800	123	63	41	21	15
10	25	60	129	600	150	1,330	1,220	114	55	37	27	13
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SUSQUEHANNA RIVER BASIN

Coccolamus Creek near Millerton, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}33'55''$, long. $77^{\circ}7'5''$, at highway bridge 2.3 miles northeast of Millerton, Perry County, and 3 miles above mouth. Zero of gage is 425.50 feet above mean sea level.

Drainage area. - 57.2 square miles.

Records available. - October 1931 to September 1936 in reports of U. S. Geological Survey; February 1930 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes. - Maximum discharge during year, 2,370 second-feet Mar. 11 (gage height, 7.18 feet); minimum, 3.2 second-feet Sept. 28, 29 (gage height, 1.05 feet).

1930-36: Maximum discharge, 3,040 second-feet Aug. 24, 1933 (gage height, 8.20 feet) from rating curve extended above 1,800 second-feet; minimum, 0.7 second-foot Aug. 15, 1932 (gage height, 0.81 foot); minimum daily discharge, 1.3 second-feet Aug. 28, 1932.

Remarks. - Records good except those for periods of ice effect, Dec. 5-8, Dec. 22 to Jan. 10, Jan. 19 to Mar. 4, which are poor and were determined from gage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Some regulation at low stages from operation of gristmill upstream.

SUSQUEHANNA RIVER BASIN

Sherman Creek at Shermandale, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}19'25''$, long. $77^{\circ}10'5''$, at highway bridge at Shermandale, Perry County, 1½ miles above mouth of Fishing Run. Zero of gage is 421.90 feet above mean sea level.

Drainage area. - 200 square miles.

Records available. - October 1931 to September 1936 in reports of U. S. Geological Survey; September 1929 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes. - Maximum discharge during year, 8,460 second-feet Mar. 12 (gage height, 10.28 feet) from rating curve extended above 3,200 second-feet; minimum, 9.7 second-feet Sept. 19, 20 (gage height, 0.81 foot); minimum daily discharge, 12 second-feet Sept. 27.

1929-36: Maximum gage height, 14.05 feet Aug. 24, 1933 (discharge not determined); minimum discharge, 3.9 second-feet Dec. 1, 1930 (gage height, 0.72 foot); minimum daily discharge, 10 second-feet Dec. 24, 25, 1930.

Maximum stage known. 20.34 feet July 22, 1927 (discharge not determined). Remarks. - Records good except those for extremely high stages and those for periods of ice effect, which are fair. Discharge for periods of ice effect, Dec. 7, 8, Dec. 24 to Jan. 4, Jan. 23 to Feb. 29, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Some regulation from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.2	32	53	37	49	200	87	32	8.9	14	6.0	7.8
2	7.4	27	51	37	48	180	133	31	8.8	9.4	5.8	7.6
3	8.5	19	46	100	48	180	132	31	8.0	7.9	5.4	8.2
4	6.3	18	39	120	56	230	108	37	8.0	8.1	5.0	7.7
5	6.1	18	41	140	55	363	98	30	7.4	8.8	4.8	6.9
6	5.6	18	36	120	53	378	948	26	7.6	7.8	5.0	6.0
7	4.9	18	33	105	51	274	527	24	7.2	7.0	5.6	5.6
8	6.0	15	31	95	50	220	316	22	8.6	6.7	5.4	4.6
9	6.3	16	47	125	49	292	250	21	8.5	6.5	4.8	4.2
10	6.7	14	43	200	48	500	345	20	6.0	5.6	4.4	4.0
11	5.8	10	121	145	47	1,350	365	20	5.4	8.8	5.3	4.0
12	6.2	15	117	98	46	1,720	286	18	7.0	7.4	6.5	4.0
13	6.0	1,190	115	96	46	744	239	17	7.7	5.6	5.6	3.8
14	5.1	318	344	85	48	425	178	23	12	5.5	5.0	4.0
15	5.8	156	248	85	53	381	150	18	8.8	6.2	4.8	3.7
16	5.2	103	205	108	60	438	132	16	7.8	4.4	4.6	3.4
17	6.4	117	152	103	58	1,210	110	15	7.0	6.7	13	3.4
18	6.9	150	125	103	56	1,410	96	15	36	6.5	7.9	3.4
19	7.1	113	103	96	54	1,030	85	22	144	6.7	6.7	3.4
20	6.0	101	89	86	52	679	74	21	21	6.2	6.0	3.5
21	6.6	80	72	79	51	810	67	14	13	5.8	5.4	3.7
22	6.8	70	60	75	50	517	63	13	10	6.2	5.2	3.5
23	7.4	63	52	68	50	318	55	12	8.4	7.2	5.2	3.4
24	6.6	50	46	64	52	233	50	11	15	7.4	5.0	3.7
25	7.2	51	42	60	65	185	46	11	12	7.8	5.0	4.0
26	6.7	42	40	57	90	142	42	9.7	9.2	7.6	5.4	3.5
27	7.3	42	39	55	180	173	40	15	8.0	7.4	6.4	3.4
28	6.6	56	38	53	250	140	37	13	8.9	9.0	6.9	3.4
29	7.0	85	37	52	230	115	34	10	8.0	8.2	35	3.4
30	188	59	37	51	105	34	9.8	11	7.8	18	6.8	
31	54	37	50	101	8.8	8.8	6.7	8.5				

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	188	4.9	15.9	0.278	0.32
November	1,190	10	102	1.78	1.99
December	344	31	81.9	1.43	1.65
January	200	37	88.6	1.55	1.79
February	250	46	70.5	1.23	1.33
March	1,720	101	485	8.48	9.78
April	948	34	171	2.99	3.34
May	37	8.8	18.9	.330	.38
June	144	5.4	14.6	.255	.28
July	14	4.4	7.32	.128	.15
August	35	4.4	7.21	.126	.14
September	8.2	3.4	4.60	.080	.09
The year	1,720	3.4	89.3	1.56	21.18

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	220	196	180	220	1,400	411	191	69	53	32	34
2	38	170	189	190	215	1,060	497	184	64	50	21	26
3	38	141	173	210	210	850	548	181	60	46	28	28
4	29	117	155	250	220	1,000	388	207	57	96	29	25
5	36	107	155	484	210	1,400	366	181	61	73	51	26
6	22	96	184	405	205	1,400	2,820	158	49	50	42	22
7	39	88	160	304	205	1,090	1,790	152	51	43	30	18
8	42	100	145	285	200	938	1,340	145	66	38	31	23
9	40	96	177	388	195	1,100	1,120	136	79	36	20	17
10	30	82	174	544	190	1,410	1,270	127	67	35	31	19
11	26	82	451	420	190	3,880	1,120	124	54	31	52	19
12	35	104	446	354	185	7,020	1,000					

SUSQUEHANNA RIVER BASIN

Conodoguinet Creek near Hogestown, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}15'10''$, long. $77^{\circ}1'15''$, 1,000 feet above highway bridge, three-eighths of a mile below mouth of Hogestown Run, and 1 mile northeast of Hogestown, Cumberland County. Zero of gage is 350.25 feet above mean sea level.

Drainage area. - 470 square miles.

Records available. - October 1931 to September 1936 in reports of U. S. Geological Survey; September 1929 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes. - Maximum discharge during year, 11,100 second-feet Mar. 13 (gage height, 10.37 feet); minimum, 61 second-feet Oct. 26 (gage height, 0.88 foot); minimum daily discharge, 87 second-feet Oct. 19, 20.

1929-36: Maximum discharge, 13,100 second-feet Dec. 2, 1934 (gage height, 11.32 feet); minimum, 24 second-feet Dec. 16, 1930.

Remarks. - Records good except those for periods of ice effect and for periods of recorder failure, which are fair. Discharge for periods of ice effect, Dec. 7, 8, Dec. 24 to Jan. 9, Jan. 22 to Feb. 29, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for periods of recorder failure, Apr. 16-21, June 18-23, determined by comparison with records for stations mentioned above. Some regulation at low stages from power operations upstream.

SUSQUEHANNA RIVER BASIN

Swatara Creek at Harper Tavern, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}24'10''$, long. $76^{\circ}34'35''$, at highway bridge at Harper Tavern, Lebanon County, 6 miles northwest of Annville, and 8½ miles below mouth of Little Swatara Creek. Zero of gage is 355.53 feet above mean sea level.

Drainage area. - 333 square miles.

Records available. - October 1919 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; December 1918 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 17 years, 530 second-feet.

Extremes. - Maximum discharge during year, 15,800 second-feet Mar. 12 (gage height, 13.75 feet); minimum, 31 second-feet Oct. 28.

1918-36: Maximum discharge, 25,300 second-feet Aug. 24, 1933 (gage height, 17.53 feet); minimum, 8 second-feet Sept. 24, 25, 1932 (gage height, 0.03 foot).

Remarks. - Records excellent except those for periods of ice effect, Dec. 6-8, Dec. 22 to Jan. 4, Jan. 21 to Mar. 4, which are poor and were determined from gage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	108	523	315	290	410	2,850	1,000	485	248	192	225	184
2	114	374	294	320	390	2,180	970	469	251	204	184	156
3	108	302	286	370	380	1,690	1,170	474	236	203	171	152
4	106	247	251	600	400	2,080	938	495	244	308	158	135
5	90	247	205	1,500	380	2,790	840	469	232	344	156	138
6	106	198	220	1,100	360	2,900	3,640	433	225	240	152	122
7	109	188	210	1,050	350	2,400	4,970	418	225	196	143	120
8	110	175	210	1,000	340	1,940	3,120	398	225	182	150	128
9	115	185	269	1,800	330	2,070	2,220	380	251	175	142	150
10	95	185	344	1,760	320	2,770	2,400	374	240	163	144	114
11	94	160	610	1,250	315	4,230	2,180	370	236	166	158	140
12	100	157	854	990	310	7,960	1,900	360	258	158	207	118
13	105	1,190	731	887	315	8,990	1,740	379	272	158	158	128
14	92	2,820	1,760	822	370	4,260	1,420	393	259	161	142	128
15	114	1,190	2,170	791	700	2,720	1,280	374	248	156	151	130
16	104	791	1,730	1,020	1,200	2,190	1,150	346	229	144	254	122
17	101	921	1,280	1,020	1,050	3,050	1,000	337	204	154	214	115
18	98	1,490	990	887	900	5,610	920	324	400	151	182	118
19	87	1,100	791	984	750	7,700	860	346	600	137	140	118
20	87	822	673	579	650	6,100	800	365	400	136	146	104
21	97	651	469	811	580	4,560	750	355	260	151	156	105
22	108	542	318	730	540	3,730	714	310	220	166	154	122
23	93	453	404	680	500	2,530	678	297	200	188	150	94
24	101	392	360	630	480	2,070	632	293	262	154	152	115
25	112	336	340	580	470	1,860	600	272	229	162	148	108
26	96	315	330	550	900	1,540	583	280	221	155	136	105
27	100	306	310	520	2,500	1,500	566	284	201	179	127	105
28	102	311	300	500	2,800	1,660	550	276	203	560	162	103
29	146	402	295	480	3,000	1,310	528	265	187	328	213	102
30	1,620	384	295	450	1,170	522	255	204	425	300	125	
31	990	290	430	1,100			248	318	272			

Month			Maximum	Minimum	Mean	Per square mile	Run-off in inches
October			1,620	87	181	0.385	0.44
November			2,820	157	579	1.23	1.37
December			2,170	205	578	1.23	1.42
January			1,800	290	819	1.74	2.01
February			3,000	310	758	1.61	1.74
March			8,990	1,100	3,210	6.83	7.87
April			4,970	522	1,355	2.88	3.21
May			495	248	359	.764	.88
June			600	187	256	.545	.61
July			560	136	210	.447	.52
August			300	127	172	.366	.42
September			184	94	123	.262	.29
The year			8,990	87	718	1.53	20.78

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	85	702	230	380	900	990	292	96	152	46	94
2	45	66	570	300	380	800	1,020	271	89	135	44	76
3	49	54	456	600	380	800	990	266	87	304	42	98
4	47	47	383	1,300	390	1,100	763	284	129	203	44	83
5	43	45	284	1,170	400	1,070	690	250	98	152	42	62
6	43	43	285	1,050	390	1,680	5,570	227	80	141	42	55
7	41	41	220	741	380	1,420	4,540	213	74	106	46	51
8	41	43	250	631	370	1,340	2,420	199	76</td			

SUSQUEHANNA RIVER BASIN

West Conewago Creek near Manchester, Pa.

Location.—Water-stage recorder, lat. $40^{\circ}4'55''$, long. $76^{\circ}43'10''$, 500 feet above Manchester-York Haven highway bridge and $\frac{1}{4}$ miles north of Manchester, York County. Zero of gage is 283.04 feet above mean sea level.

Drainage area.—510 square miles.

Records available.—October 1928 to September 1936.

Extremes.—Maximum discharge during year, 13,700 second-feet Mar. 12; maximum gage height, 17.08 feet Mar. 1st (backwater); minimum discharge, 8.0 second-feet Oct. 6, 9, 17 (gage height, 1.32 feet); minimum daily discharge, 14 second-feet Oct. 6, 17.

1928-36: Maximum discharge, 47,600 second-feet Aug. 24, 1933 (gage height, 24.14 feet); minimum, 2 second-feet Aug. 7, 8, Oct. 20, 1930.

Remarks.—Records fair except those for the following periods, which are poor. Discharge for periods of missing gage record, Oct. 27-29, July 15 to Aug. 5, Aug. 10, 11, 24-29, Sept. 14-16, and for period of backwater from Susquehanna River, Mar. 18-21, determined by comparison with records for stations in adjacent drainage areas. Discharge for periods of ice effect, Dec. 22 to Jan. 3, Jan. 21 to Feb. 28, determined from gage heights, weather records, and by comparison with records for stations mentioned above. Slight regulation at low stages from operation of gristmills upstream.

SUSQUEHANNA RIVER BASIN

Cedorus Creek at Spring Grove, Pa.

Location.—Water-stage recorder, lat. $39^{\circ}52'10''$, long. $76^{\circ}51'55''$, at highway bridge at Spring Grove, York County. Zero of gage is 436.22 feet above mean sea level.

Drainage area.—74.3 square miles.

Records available.—March 1932 to September 1936 in reports of U. S. Geological Survey; April 1929 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes.—Maximum discharge during year, 1,380 second-feet Feb. 27 (gage height 6.11 feet); minimum, 0.8 second-foot Sept. 20 (gage height, 0.23 foot); minimum daily discharge, 2.0 second-feet Sept. 20.

1929-36: Maximum discharge, 11,200 second-feet Aug. 23, 1933 (gage height, 11.84 feet) from rating curve extended on basis of computed discharge over dam upstream; minimum recorded, that of Sept. 20, 1936; minimum daily discharge, that of Sept. 20, 1936.

Remarks.—Records fair. Discharge for period of ice effect, Dec. 22 to Jan. 2, determined from gage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Discharge for days of missing gage record, Jan. 26, Feb. 4, 5, 11, 13, determined by comparison with records for stations mentioned above. Regulation at low stages from operation of paper mill above station.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	173	356	153	195	4,930	735	300	85	125	90	192
2	22	108	268	165	190	3,070	730	287	78	115	75	152
3	14	82	226	1,200	185	2,030	982	268	105	726	65	115
4	24	68	186	3,110	178	3,360	762	291	116	547	60	96
5	21	63	137	1,540	174	4,880	620	365	104	521	58	84
6	14	61	122	1,290	168	3,680	8,250	283	92	260	55	73
7	23	58	117	721	165	2,350	3,590	248	98	170	50	64
8	20	54	120	605	162	1,670	230	94	120	54	54	54
9	18	53	190	1,100	160	2,110	1,290	223	78	84	48	53
10	22	48	352	3,610	160	3,140	2,280	202	106	68	100	58
11	28	57	755	1,510	162	4,940	1,830	189	110	289	450	61
12	29	54	1,050	990	163	12,300	1,610	192	96	631	205	63
13	26	67	540	903	165	8,990	1,440	189	5,390	260	107	54
14	28	447	2,180	1,260	170	4,300	1,080	205	1,110	158	68	49
15	21	240	1,340	1,060	200	2,150	930	192	319	105	307	45
16	19	142	1,170	1,760	350	1,530	845	170	179	70	469	50
17	14	178	789	1,350	800	1,760	735	155	120	45	212	47
18	30	1,260	605	930	750	4,300	653	146	112	33	186	44
19	39	829	521	1,190	600	4,180	605	173	1,330	27	110	35
20	25	435	455	674	450	5,720	563	216	752	28	82	29
21	26	325	371	750	350	8,880	521	202	244	32	60	36
22	27	237	200	620	280	4,530	485	161	138	990	59	27
23	19	189	165	510	250	1,950	446	138	96	800	57	29
24	23	173	150	425	235	1,450	402	127	88	650	52	29
25	22	138	142	360	265	1,280	374	110	73	550	50	25
26	22	127	138	320	700	1,080	352	110	66	450	350	25
27	25	117	136	280	3,000	1,410	342	110	73	550	500	21
28	40	169	135	255	4,300	2,140	334	112	73	1,200	400	37
29	200	1,300	137	235	3,920	1,180	321	105	78	600	450	31
30	668	655	140	215	930	312	98	92	250	648	30	30
31	465	143	205	818	100				120	275		

Month			Maximum	Minimum	Mean	Per square mile	Run-off in inches
October			668	14	54.3	0.126	0.15
November			1,300	48	264	.518	.58
December			2,160	117	430	.843	.97
January			3,610	153	945	1.85	2.13
February			4,300	160	650	1.27	1.37
March			12,300	818	3,450	6.76	7.79
April			8,250	312	1,170	2.29	2.56
May			365	98	190	.373	.43
June			5,390	66	383	.751	.84
July			1,200	27	341	.669	.77
August			648	48	186	.365	.42
September			192	21	56.9	.112	.13
The year			12,300	14	680	1.33	18.14

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.3	8.4	41	27	47	578	143	72	30	19	18	9.6
2	10	7.0	34	29	47	276	180	69	27	18	18	9.3
3	9.3	7.4	30	554	45	366	196	79	29	42	18	11
4	9.9	7.8	27	239	45	502	136	82	39	27	16	10
5	9.0	7.4	24	196	42	368	133	68	29	36	14	8.6
6	8.4	7.0	25	117	41	259	754	62	28	18	16	8.4
7	11	7.4	23	92	45	200	359	60	28	14	24	10
8	9.0	9.3	30	81	41	185	262	58	34	13	15	9.3
9	9.3	7.4	42	413	44	206	251	55	33	10	14	12
10	9.6	8.2	33	274								

SUSQUEHANNA RIVER BASIN

South Branch of Codorus Creek near York, Pa.

Location. - Water-stage recorder, lat. $39^{\circ}55'10''$, long. $76^{\circ}45'0''$, just below dam of pumping station of York Water Co., half a mile above confluence with Codorus Creek, and 3 miles southwest of York, York County. Zero of gage is 373.03 feet above mean sea level.

Drainage area, 117 square miles.

Records available. - October 1931 to September 1936 in reports of U. S. Geological Survey; May 1925 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes. - Maximum discharge during year, 1,880 second-feet Feb. 28; maximum gage height, 6.85 feet Feb. 27 (affected by ice); minimum discharge, 0.9 second-foot Sept. 15, 17 (gage height, 0.14 foot); minimum daily discharge, 5.5 second-feet Sept. 24.

1925-36: Maximum discharge, 19,300 second-feet Aug. 23, 1933 (gage height, 17.97 feet, from floodmark in gage house) from rating curve extended on basis of contracted-opening determination; minimum, 0.8 second-foot Aug. 28, 1935; minimum daily discharge, that of Sept. 24, 1936.

Remarks. - Records good except those for periods of ice effect and period of no gage record, which are poor. Discharge for periods of ice effect, Dec. 22 to Jan. 3, Jan. 24 to Feb. 27, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for period of no gage record, July 9-13, determined by comparison with records for stations mentioned above. Regulation from pumping plant upstream. Municipal water supply for York diverted above station not included in records except in part of monthly table. Record of monthly diversion furnished by York Water Co.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	42	76	58	80	826	238	119	53	44	26	14
2	19	31	69	66	78	414	269	119	44	40	24	12
3	14	39	60	900	76	481	301	132	44	94	26	17
4	9.6	34	56	410	73	922	223	173	64	67	21	17
5	11	31	48	281	72	478	216	123	53	74	16	13
6	19	30	55	192	71	356	741	120	54	51	18	15
7	19	30	45	156	70	282	472	106	45	39	32	17
8	13	45	58	135	70	253	383	102	53	32	37	11
9	68	34	79	588	70	264	363	96	52	28	34	10
10	21	33	61	450	71	283	394	96	46	26	19	8.8
11	30	119	107	255	72	663	379	131	47	40	56	9.6
12	33	76	108	209	75	995	339	55	47	80	33	12
13	19	123	91	218	80	681	328	53	202	60	24	12
14	17	68	130	205	90	489	289	69	72	41	16	11
15	13	39	117	221	105	408	268	80	56	15	17	5.7
16	18	41	121	376	120	352	260	83	47	13	128	6.6
17	12	259	100	196	140	370	234	81	45	17	35	6.0
18	10	299	90	212	160	677	222	84	53	21	18	6.2
19	14	180	87	267	90	650	209	100	88	17	15	7.6
20	11	100	81	197	88	580	195	78	47	49	17	9.3
21	19	48	58	166	86	920	185	71	43	26	15	11
22	17	42	56	161	86	709	175	68	39	104	15	8.6
23	19	39	53	128	88	546	164	66	37	47	16	7.0
24	24	33	51	115	98	479	156	66	60	130	14	5.5
25	18	37	49	110	120	423	149	62	54	50	9.6	6.2
26	17	45	48	103	600	370	149	56	43	21	25	9.8
27	18	48	48	98	1,000	416	141	69	39	101	26	19
28	21	80	49	94	949	399	141	62	45	66	19	9.7
29	30	80	51	89	792	316	144	58	38	37	30	7.3
30	117	88	52	86	283	129	58	41	31	28	21	13
31	49	54	83	258	59	59	25	17				

Month	Observed			Diversion	Corrected for diversion			Diversion	Corrected for diversion			
	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches		Mean	Maximum	Minimum	Mean
October	117	9.6	23.6	12.8	36.4	0.311	0.36		64.9	10.3	75.2	0.234
November	299	30	73.1	12.6	85.7	.732	.82		23	10.1	1.16	1.29
December	130	45	71.2	15.0	84.2	.720	.83		323	9.3	333	1.19
January	900	58	220	15.5	234	2.00	2.31		851	9.3	840	2.61
February	1,000	70	192	14.2	206	1.76	1.90		426	10.2	436	1.35
March	995	253	501	12.3	513	4.38	5.05		426	9.9	905	2.31
April	741	129	262	12.4	274	2.34	2.61		443	9.9	303	.941
May	173	53	86.9	15.6	100	.855	.99		1,765	10.2	1,775	5.51
June	202	37	55.0	13.9	68.9	.589	.66		292	10.6	303	1.08
July	130	13	47.9	14.5	62.4	.533	.61		239	10.2	249	.773
August	128	9.6	26.7	14.7	41.4	.354	.41		145	10.4	155	.55
September	17	5.5	10.6	14.9	25.5	.218	.24		133	10.6	144	.447
The year	1,000	5.5	131	13.5	144	1.23	16.79		49	75.3	10.4	.266

SUSQUEHANNA RIVER BASIN

Conestoga Creek at Lancaster, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}8'0''$, long. $76^{\circ}16'40''$, at Pennsylvania Railroad bridge 500 feet below diversion dam of city waterworks and three-quarters of a mile east of Lancaster, Lancaster County. Zero of gage is 244.74 feet above mean sea level.

Drainage area, 322 square miles.

Records available, September 1928 to September 1936.

Extremes. - Maximum discharge during year, 6,890 second-feet Mar. 12 (gage height, 9.58 feet); probably no flow at times when pool was drawn down and gates in dam were closed; minimum daily discharge, 20 second-feet Oct. 19.

1928-36: Maximum discharge, 22,800 second-feet Aug. 24, 1933 (gage height, 17.52 feet, from flood mark in recorder shelter) from rating curve extended above 3,500 second-feet by slope-area method; probably no flow at times; minimum daily discharge observed, 9 second-feet Oct. 14, 1931, Sept. 15, 1932.

Remarks. - Records fair. Discharge for period of ice effect, Dec. 22 to Jan. 2, determined from gage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Discharge for period of missing gage record, Jan. 31 to Feb. 5 determined by comparison with records for gage stations mentioned above. Regulation from operation of waterworks. Water supply for city of Lancaster diverted above gage not included in records except in part of monthly table. Record of diversion furnished by city of Lancaster.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	143	379	205	350	1,580	908	419	179	197	68	117
2	66	86	359	215	340	1,180	940	407	158	172	59	99
3	94	47										

SUSQUEHANNA RIVER BASIN

Muddy Creek at Castle Fin, Pa.

Location.—Water-stage recorder, lat. $39^{\circ}46'25''$, long. $76^{\circ}19'0''$, 1 mile below Castle Fin, York County, and $2\frac{3}{4}$ miles above mouth of creek. Zero of gage is 175.42 feet above mean sea level.

Drainage area.—133 square miles.

Records available.—October 1928 to September 1936.

Extremes.—Maximum discharge during year, 3,700 second-feet Jan. 9; maximum gage height, 7.88 feet Jan. 3 (affected by ice); minimum discharge, 13 second-feet Sept. 19; minimum daily discharge, 35 second-feet Sept. 24.

1928-36: Maximum discharge, 16,600 second-feet Aug. 23, 1933 (gage height, 21.11 feet, from floodmark in gage shelter) from rating curve extended above 4,000 second-feet on basis of computed discharge over power dam upstream; minimum gage height, 0.90 foot Nov. 29, 1930 (discharge not determined); minimum daily discharge observed, 20 second-feet July 29, 1931.

Remarks.—Records fair. Discharge for periods of ice effect, Dec. 22 to Jan. 6, Jan. 23 to Feb. 26, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Regulation from operation of hydroelectric plant upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	102	145	105	140	722	294	197	136	112	79	62
2	89	85	141	120	135	382	308	191	123	109	60	49
3	80	86	127	1,950	130	730	315	289	124	116	70	54
4	74	82	116	530	130	664	271	346	150	122	60	67
5	72	80	102	300	130	471	259	218	142	115	74	50
6	74	84	127	260	130	353	874	200	121	114	62	50
7	85	81	106	236	125	291	462	194	122	90	67	54
8	75	97	119	215	130	261	374	191	119	85	68	54
9	82	94	135	1,220	130	288	355	178	130	84	66	54
10	73	79	125	548	135	317	394	177	129	79	61	46
11	69	90	165	341	140	1,270	408	174	129	126	71	48
12	102	83	167	286	140	1,180	361	173	159	95	32	48
13	83	171	148	288	145	710	353	224	185	90	64	46
14	72	149	183	275	155	499	322	273	158	81	61	46
15	78	105	174	303	220	410	312	176	156	86	46	48
16	82	88	194	489	245	360	309	167	128	68	94	47
17	82	717	170	270	240	434	287	160	102	67	80	43
18	88	361	158	281	250	748	276	158	111	68	65	48
19	88	229	152	343	180	623	265	182	131	67	64	46
20	80	174	146	323	160	547	257	164	125	82	61	43
21	70	160	114	304	150	734	248	152	118	77	54	47
22	88	135	105	227	140	554	242	152	98	78	54	58
23	88	127	100	185	140	463	233	148	102	68	60	44
24	102	118	97	180	135	420	227	148	140	148	55	35
25	82	107	96	175	135	386	218	141	138	107	55	59
26	91	111	95	170	1,700	350	218	140	114	71	62	44
27	83	104	94	165	1,300	444	207	149	118	86	62	41
28	87	131	94	160	990	430	209	152	100	104	62	40
29	86	289	95	155	1,060	350	209	140	112	80	80	39
30	181	155	97	150	330	203	135	109	80	79	44	
31	106	99	99	145	313	131			67	64		

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	181	69	86.2	0.648	0.75
November	717	79	149	1.12	1.25
December	194	94	129	.970	1.12
January	1,950	105	345	2.59	2.99
February	1,700	125	308	2.32	2.50
March	1,270	261	517	3.89	4.48
April	874	203	309	2.32	2.59
May	346	131	181	1.36	1.57
June	185	98	127	.955	1.07
July	148	67	91.0	.684	.79
August	94	46	65.9	.495	.57
September	67	35	48.5	.365	.41
The year	1,950	35	196	1.47	20.09

POTOMAC RIVER BASIN

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POTOMAC RIVER BASIN

Evitts Creek near Bedford Valley, Pa.

Location. - Water-stage recorder, lat. $39^{\circ}47'23''$, long. $78^{\circ}38'48''$, 2 miles upstream from Thomas W. Koon Dam, half a mile upstream from backwater from dam, and 3 miles south of Bedford Valley post office, Bedford County.

Drainage area. - 30.2 square miles.

Records available. - September 1932 to September 1936.

Extremes. - Maximum discharge during year, about 5,240 second-feet Mar. 17 (gage height, 7.13 feet); minimum, 1.9 second-feet July 17 (gage height, 1.03 feet).

1932-36: Maximum discharge, that of Mar. 17, 1936; minimum, 1.2 second-feet July 27, 1934 (gage height, 0.96 foot).

Maximum stage known, about 8 feet, from flood mark, date unknown (discharge not determined).

Remarks. - Records good except those above 500 second-feet, which are fair, and those affected by ice, Dec. 23 to Jan. 2, Jan. 20 to Feb. 27, or missing stage record, Sept. 14-18, which are poor and are based on weather data and hydrographic comparisons with records of nearby streams.

Licking Creek near Sylvan, Pa.

Location. - Chain gage, lat. $39^{\circ}43'20''$, long. $78^{\circ}43'35''$, at highway bridge 200 feet north of Pennsylvania-Maryland State line, 3 miles southwest of Sylvan, Franklin County, and 10 miles above mouth. Zero of gage is 434.16 feet above mean sea level.

Drainage area. - 158 square miles.

Records available. - June 1930 to September 1936.

Extremes. - Maximum discharge during year, 20,700 second-feet Mar. 18 (gage height, 17.4 feet, from floodmark) from rating curve extended on basis of contracted-opening determination; minimum, 5.1 second-feet Sept. 19-21, 23, 26-29 (gage height, 0.82 foot).

1930-36: Maximum discharge, that of Mar. 18, 1936; minimum, 3.0 second-feet Aug. 8, 1930 (gage height, 0.64 foot).

Remarks. - Records good except those for period of missing gage record, Oct. 1-6, which are fair and were determined by comparison with records for stations in adjacent drainage areas; and those for periods of ice effect, Dec. 3-6, Dec. 22 to Jan. 9, Jan. 21 to Feb. 26, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations mentioned above. Discharge for high stages determined from graphs based on twice-daily gage readings.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	4.6	5.3	7.8	12	11	218	59	20	8.8	7.5	3.8	3.4	
2	5.0	5.0	8.1	13	10	156	58	20	7.8	6.3	3.6	3.4	
3	4.8	6.9	56	10	127	52	35	7.5	5.6	3.6	4.0		
4	4.6	6.1	44	10	156	46	31	7.2	4.8	3.4	3.6		
5	4.2	6.3	31	10	297	48	25	6.6	4.6	4.4	3.1		
6	6.6	4.4	6.9	23	9	250	346	22	6.3	4.4	5.6	2.7	
7	5.3	4.8	6.9	22	9	178	182	20	6.6	4.0	6.6	2.6	
8	5.0	6.1	7.5	24	8	150	121	18	12	3.8	4.4	2.6	
9	4.4	5.3	9.2	43	8	167	116	18	9.2	3.8	3.6	2.4	
10	4.4	4.8	8.8	71	7	227	119	16	7.8	3.4	3.2	2.4	
11	4.6	4.6	12	45	7	529	98	18	12	2.9	3.2	2.3	
12	6.6	6.1	8.8	37	6	586	91	18	16	2.7	3.2	2.3	
13	5.6	95	15	40	6	303	74	18	21	2.9	3.1	2.3	
14	4.8	23	64	40	8	182	64	18	14	2.9	3.1	3.0	
15	4.4	14	53	35	40	137	59	16	10	2.6	3.4	2.7	
16	4.2	13	59	39	35	119	53	14	9.8	2.4	3.1	2.6	
17	4.0	16	38	33	30	1,990	49	14	8.8	2.3	2.7	2.6	
18	4.0	14	30	34	25	1,080	45	14	8.8	2.4	2.6	2.6	
19	4.0	12	27	32	23	442	41	15	8.5	2.4	4.2	2.6	
20	4.4	12	22	37	21	255	39	13	7.8	2.2	4.2	2.6	
21	4.0	10	18	33	20	309	37	12	6.9	2.2	5.2	2.6	
22	5.0	10	19	30	19	167	35	12	6.1	2.2	10	2.6	
23	4.6	9.5	20	22	18	124	31	11	6.3	2.4	4.4	2.4	
24	4.4	8.5	17	24	17	153	29	10	7.2	8.5	3.4	2.7	
25	4.2	8.5	15	23	53	134	27	11	7.2	5.3	3.1	2.9	
26	4.2	8.5	13	20	540	106	26	10	6.1	3.4	4.6	2.6	
27	4.2	8.5	13	17	480	134	25	10	5.3	3.7	3.8	2.4	
28	4.2	9.2	14	13	327	101	25	10	5.0	31	3.2	2.2	
29	11	9.5	12	14	210	85	24	9.8	4.8	8.5	6.9	2.2	
30	9.5	8.8	12	13	76	22	9.5	5.3	5.8	6.1	3.4		
31	6.1	12	12	69	69	9.2			4.6	4.0			
Month				Maximum	Minimum	Mean	Per square mile	Run-off in inches					
October				11	4.0	5.04	0.167	0.19					
November				95	4.4	11.7	.387	.43					
December				64	6.1	18.3	.606	.70					
January				71	12	30.1	.997	1.15					
February				540	6	68.2	2.26	2.44					
March				1,990	69	291	9.64	11.11					
April				346	22	68.0	2.25	2.51					
May				35	9.2	16.0	.530	.61					
June				21	4.8	8.56	.283	.32					
July				37	2.2	5.96	.197	.23					
August				10	2.6	4.18	.138	.16					
September				4.0	2.2	2.73	.090	.10					
The year				1,990	2.2	44.2	1.46	19.95					

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	49	40	52	88	1,280	273	92	31	19	17	19
2	15	40	34	56	86	875	297	82	30	20	14	13
3	17	32	30	65	84	675	297	84	27	21	11	11
4	18	30	25	110	82	755	239	218	27	22	12	11
5	17	29	23	250	80	1,420	212	96	25	18	10	9.4
6	16	26	23	200	80	1,280	2,130	83	23	16	9.8	7.0
7	16	26	24	190	80	960	1,490	73	21	14	13	7.4
8	16	26	33	180	80	715	1,100	70	31	13	11	7.0
9	16	29	37									

ALLEGHENY RIVER BASIN

Allegheny River at Larabee, Pa.

Location.—Wire-weight gage, lat. $41^{\circ}54'5''$, long. $78^{\circ}23'5''$, at bridge on U. S. Highway 6 at Larabee, McKean County, 1 mile below mouth of Potato Creek and $3\frac{1}{2}$ miles south of Eldred. Zero of gage is 1,423.39 feet above mean sea level.

Drainage area.—541 square miles.

Records available.—October 1920 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; June 1915 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—12 years (1920-21, 1925-36), 791 second-feet.

Extremes.—Maximum discharge during year, 6,720 second-feet Mar. 18 (gage height, 15.46 feet) from rating curve extended above 4,500 second-feet; minimum, 18 second-feet July 20 (gage height, 0.32 foot).

1915-36: Maximum discharge, 8,210 second-feet (revised) Nov. 18, 1927 (gage height, 17.6 feet, from graph based on gage readings) from rating curve extended above 4,500 second-feet; minimum about 0.1 second-foot July 25, 1934 (gage height, 0.22 foot); minimum daily discharge, 3.5 second-feet Aug. 8, 1934.

Remarks.—Records fair except those for periods of ice effect, Dec. 3-9, Dec. 22 to Feb. 27, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations downstream. Discharge for periods of missing gage record, Dec. 16, 17, July 3-6, determined by comparison with records for stations mentioned above. Discharge for high stages determined from graphs based on twice-daily gage readings. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

OHIO RIVER BASIN

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	158	327	1,080	400	210	3,000	4,240	711	188	373	33	52
2	421	294	627	420	200	2,320	3,850	683	168	305	32	47
3	294	272	480	460	200	2,100	3,630	800	158	230	30	42
4	219	261	430	650	220	3,000	3,050	711	148	168	33	37
5	219	240	410	600	210	3,850	2,500	711	128	119	40	37
6	198	305	400	560	200	3,630	2,550	683	119	87	214	35
7	188	327	430	540	190	2,950	3,410	627	258	65	411	34
8	168	397	550	530	180	2,630	3,300	600	373	47	115	35
9	148	397	1,100	530	180	2,930	2,850	547	283	44	59	34
10	138	373	1,430	560	170	3,080	2,550	421	240	32	47	30
11	138	397	1,390	540	160	3,750	2,560	470	483	37	280	27
12	119	470	1,280	550	160	4,980	2,280	470	350	67	255	26
13	119	1,090	1,360	570	160	5,320	2,050	470	261	68	104	26
14	115	1,430	1,430	700	180	4,810	1,790	470	219	50	93	28
15	111	1,360	1,320	600	170	4,240	1,750	373	178	37	96	25
16	106	1,180	1,400	530	160	4,170	1,630	373	158	34	67	37
17	95	1,110	1,500	490	160	4,670	1,390	350	148	32	56	56
18	95	890	1,430	470	150	6,230	1,180	294	208	28	59	50
19	115	800	1,220	420	150	6,100	1,110	421	219	27	47	40
20	96	770	980	380	140	5,620	980	470	198	22	58	37
21	93	740	770	350	140	4,830	980	327	178	22	65	32
22	193	683	630	320	140	4,480	1,110	283	148	23	62	35
23	240	470	550	300	140	4,210	950	261	138	19	60	30
24	178	421	510	280	140	4,140	800	261	128	77	50	30
25	168	397	480	260	160	4,480	740	272	86	100	45	146
26	208	421	450	250	500	4,810	740	240	86	59	42	60
27	316	421	430	240	2,000	4,890	655	294	72	40	40	53
28	305	445	420	230	2,000	3,630	4,920	655	272	79	41	35
29	305	885	410	220	2,000	3,410	4,720	963	240	74	38	53
30	510	1,280	400	220	2,000	4,510	740	230	127	54	53	28
31	373	400	210			4,410		219	42			59
Month						Maximum	Minimum	Mean	Per square mile	Run-off in inches		
October						510	93	198	0.366	0.42		
November						1,430	240	628	1.16	1.29		
December						1,500	400	829	1.53	1.76		
January						700	210	432	.799	.92		
February						3,630	140	476	.880	.95		
March						6,230	2,100	4,186	7.74	8.92		
April						4,240	655	1,893	3.50	3.90		
May						800	219	437	.808	.95		
June						483	72	187	.346	.39		
July						373	19	77.0	.142	.16		
August						411	30	86.9	.161	.19		
September						146	25	40.5	.075	.08		
The year						6,230	19	792	1.46	19.91		

ALLEGHENY RIVER BASIN

Allegheny River at Franklin, Pa.

Location.—Water-stage recorder, lat. $41^{\circ}23'25''$, long. $79^{\circ}49'10''$, at Eighth Street Bridge, at Franklin, Venango County, 1,000 feet below mouth of French Creek.

Zero of gage is 956.26 feet above mean sea level.

Drainage area.—5,982 square miles.

Records available.—October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; April 1905 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—18 years (1918-36), 9,492 second-feet.

Extremes.—Maximum discharge during year, 118,000 second-feet Mar. 28 (gage height, 19.02 feet); minimum, 470 second-feet Sept. 12 (gage height, 1.72 feet).

1905-36: Maximum discharge, 191,000 second-feet (revised) Mar. 26, 1913, from rating curve extended above 110,000 second-feet; maximum gage height, 26.0 feet, present datum, Feb. 27, 1917 (affected by ice); minimum discharge, 334 second-feet July 30, 1934 (gage height, 1.63 feet).

Maximum free-flow stage known, 25.0 feet, present datum, Mar. 17, 1865 (discharge, 196,000 second-feet, from rating curve extended above 110,000 second-feet).

Remarks.—Records good except those for periods of faulty recorder operation and ice effect, Dec. 14-21, Dec. 28 to Jan. 18, Jan. 25 to Mar. 6, which are fair and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for the stations at Red House and at Parkers Landing.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.				
1	2,130	2,910	5,940	3,700	2,800	30,000	54,100	13,700	2,960	2,000	806	1,190				
2	2,050	2,910	5,130	4,500	2,800	25,000	44,600	12,700	2,780	732	1,080					
3	1,970	2,630	4,670	5,500	2,700	21,000	37,800	18,400	2,590	1,880	672	980				
4	1,930	2,390	4,090	8,000	2,900	18,000	31,800	16,700	2,410	1,500	684	871				
5	2,030	2,280	3,030	10,000	3,000	28,000	35,200	13,200	2,260	1,420	765	806				
6	2,010	2,300	2,930	9,000	2,800	28,000	29,800	11,000	2,050	1,250	1,690	720				
7	1,890	2,550	3,370	8,000	2,700	24,300	38,000	9,500	1,930	1,090	1,540	660				
8	1,770	2,760	4,120	7,200	2,600	22,400	35,800	8,270	1,880	994	1,150	605				
9	1,670	2,980	10,100	7,000	2,500	32,000	28,500	7,320	2,240	910	924	572				
10	1,570	3,030	19,000	10,000	2,400	44,000	26,600	6,600	2,650	858	768	540				
11	1,520	3,030	18,400	10,000	2,300	54,900	24,700	5,920	2,820	819	819	510				
12	1,460	3,170	15,400	9,500	2,300	77,400	24,100	5,430	2,920	845	819	490				
13	1,390	3,960	12,600	9,500	2,300	71,000	26,600	5,450	3,120	756	732	480				
14	1,330	6,020	10,500	10,000	2,400	56,300	25,900	5,750	2,900	684	672	510				
15	1,260	7,360	11,500	10,000	2,400	46,300	22,300	5,920	2,290	660	684	540				
16	1,200	6,760	24,000	9,000	2,300	42,500	19,400	5,430	1,950	616	790	540				
17	1,130	5,770	21,000	8,200	2,200	45,500	17,800	4,820	1,740	583	858	638				
18	1,130	5,130	16,000	7,700	2,150	45,100	15,700	4,390	1,760	561	768	540				
19	1,110	4,520	13,000	7,450	2,100	38,600	14,200	5,430	1,960	550	744	520				
20	1,110	4,230	10,000	5,610	2,100	39,700	13,200	6,600	1,970	540	806	583				
21	1,130	4,090	8,000	5,290	2,050	40,800	12,700	6,250	1,830	510	845	660				
22	1,210	3,950	6,760	5,130	2,000	35,300	16,200	5,430	1,660	500	1,010	605				
23	1,390	3,820	6,100	4,520	2,000	31,100	18,400	4,680	1,480	547	871	572				
24	1,790	3,550	5,940	3,650	2,700	44,900	15,200	4,120	1,340	1,430	832	594				
25	2,030	3,170	5,290	3,800	8,000	74,900	12,700	3,720	1,260	1,390	793	672				
26	1,970	3,000	4,670	3,600	26,000	94,000	10,800	3,470	1,200	1,130	793	684				
27	1,810	2,950	3,820	3,400	55,000	99,600	9,500	3,600	1,180	1,390	756	680				
28	1,650	3,120	4,000	3,300	50,000	112,000	8,470	3,720	1,120	1,440	708	684				
29	1,560	4,540	3,700	3,100	37,000	89,200	11,600	3,470	1,090	1,220	1,060	660				
30	1,590	5,770	3,600	3,000	70,900	14,200	3,300	1,520	994	1,240	672					
31	2,320	3,600	2,900	62,800	3,090	924	1,180									
Month				Maximum	Minimum	Mean	Per square mile	Run-off in inches								
October				2,820	1,110	1,633	0.273	0.31								
November				7,360	2,280	3,822	.639	.71								
December				24,000	2,930	8,718	1.46	1.68								
January				10,000	2,900	6,502	1.09	1.26								
February				55,000	2,000	8,086	1.35	1.46								
March				112,000	18,000	49,850	8.33	9.60								
April				54,100	8,470	22,820	3.81	4.25								
May				18,400	3,090	7,012	1.17	1.35								
June				3,120	1,090	2,019	.338	.38								
July				2,280	500	1,041	.174	.20								
August				1,690	672	887	.148	.17								
September				1,190	480	661	.110	.12								
The year				112,000	480	9,451	1.58	21.49								

ALLEGHENY RIVER BASIN

Allegheny River at Parkers Landing, Pa.

Location.—Water-stage recorder, lat. $41^{\circ}6'5''$, long. $79^{\circ}40'45''$, at highway bridge at Parkers Landing, Armstrong County, 1.1 miles below mouth of Clarion River.

Zero of gage is 845.14 feet above mean sea level.

Drainage area.—7,671 square miles.

Records available.—October 1932 to September 1936.

Extremes.—Maximum discharge during year, 128,000 second-feet Mar. 28 (gage height, 19.30 feet, from floodmark in gage well); minimum, 628 second-feet July 23 (gage height, 0.86 foot).

1932-36: Maximum discharge, that of Mar. 28, 1936; maximum gage height, 20.60 feet Feb. 27, 1935 (affected by ice); minimum discharge, 409 second-feet July 30, 1934 (gage height, 0.67 foot).

Maximum stage known, 29.0 feet Mar. 17, 1865 (discharge not determined).

Remarks.—Records good except those for periods of missing gage record, Nov. 2-7, Apr. 22-25, July 18, which are fair and were determined by comparison with records for the station at Franklin, and those for period of ice effect, Dec. 24 to Feb. 27, which are poor and were determined from gage heights, weather records, and by comparison with records for stations upstream. Regulation at low stages from power operations on Clarion River.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.

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OHIO RIVER BASIN

Ohio River at Sewickley, Pa.

Location. - Water-stage recorder, lat. $40^{\circ}31'50''$, long. $80^{\circ}11'20''$, 200 feet above highway bridge at Sewickley, Allegheny County, half a mile above mouth of Narrows Run, and $1\frac{1}{2}$ miles above Dashields Dam. Zero of gage is 690.00 feet above mean sea level.

Drainage area. - 19,500 square miles.

Records available. - October 1933 to September 1936.

Extremes. - Maximum discharge during year, 574,000 second-feet Mar. 18 (gage height, 34.75 feet, from floodmark in gage house); minimum, 2,600 second-feet Sept. 26 (gage height, 2.60 feet).

1933-36: Maximum discharge, that of Mar. 18, 1936; minimum, about 2,000 second-feet July 25, 1934; minimum daily discharge, 2,150 second-feet July 25, 1934.

Remarks. - Records good except those below 4,000 second-feet and those for period of ice effect, which are fair. Discharge for period of ice effect, Jan. 26 to Feb. 3, determined from gage heights, weather records, and by comparison with records for stations upstream. Records for period of recorder failure, Apr. 2-9, based on stage-relation curve with upper gage at Dashields Dam. Some regulation at low stages from operation of locks upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,360	8,680	13,400	13,300	11,000	97,200	95,000	22,200	7,280	3,680	8,500	12,300
2	6,000	9,400	13,100	13,800	11,000	79,600	86,200	21,500	6,640	4,430	6,640	9,670
3	6,400	8,230	12,300	20,000	11,500	70,800	81,800	20,800	6,480	4,990	4,850	8,140
4	6,160	7,690	11,800	76,800	13,200	64,300	73,000	23,000	6,240	6,400	4,360	7,690
5	5,600	7,120	10,300	88,200	16,800	68,600	62,200	23,700	5,600	7,040	4,220	7,280
6	5,360	7,120	9,490	68,600	25,700	79,600	73,000	20,800	5,060	26,600	5,060	6,000
7	5,360	7,280	9,220	57,000	29,800	70,800	150,000	18,800	5,360	33,600	7,910	5,200
8	5,280	8,140	10,300	58,000	28,000	60,600	134,000	16,900	5,680	18,800	10,700	4,360
9	4,710	8,680	19,700	62,200	18,100	50,100	95,000	15,600	5,760	12,400	8,770	4,010
10	4,640	9,220	60,300	90,600	16,200	63,700	79,600	13,700	6,480	9,040	6,680	3,620
11	4,640	10,100	70,800	92,800	15,000	85,900	77,400	12,300	8,590	7,520	5,360	3,740
12	4,570	10,200	58,000	68,600	13,500	132,000	75,200	11,400	9,580	6,400	4,500	3,870
13	4,430	16,900	47,600	53,800	13,100	167,000	68,600	11,800	10,100	5,360	4,570	4,570
14	4,920	41,200	52,800	49,600	20,400	126,000	66,400	12,100	12,200	4,640	4,710	4,220
15	5,520	47,600	68,700	47,600	39,600	103,000	60,100	12,900	10,700	4,710	4,150	4,500
16	4,850	35,900	77,400	44,600	80,700	99,300	51,700	13,700	8,140	4,500	3,740	4,010
17	4,290	26,100	84,000	41,600	63,600	195,000	45,600	12,100	6,800	4,290	3,560	3,680
18	4,290	17,800	70,800	38,600	48,600	465,000	39,600	12,300	6,640	3,620	3,440	3,260
19	4,290	16,200	54,800	40,600	43,600	440,000	33,900	11,300	5,160	3,620	3,560	2,960
20	4,500	15,000	43,600	33,900	36,900	210,000	29,800	14,400	6,160	3,260	3,800	2,900
21	4,640	14,400	34,800	32,100	28,700	147,000	26,900	19,400	5,680	3,020	3,920	3,020
22	4,360	12,800	21,600	29,400	23,000	139,000	26,900	18,100	5,280	2,900	5,200	2,900
23	4,360	13,500	17,400	26,100	18,800	129,000	28,600	15,000	4,640	3,020	4,850	2,900
24	4,850	11,800	16,800	18,800	15,600	137,000	30,300	12,100	4,150	4,970	5,200	2,900
25	7,040	10,500	18,800	15,000	27,500	211,000	26,100	11,100	3,900	4,850	5,930	3,500
26	10,600	9,670	15,000	13,500	115,000	242,000	23,700	9,940	3,870	6,320	6,720	2,660
27	9,130	10,300	12,100	12,500	187,000	215,000	18,800	9,400	3,740	6,400	9,130	2,780
28	7,360	10,100	12,400	11,800	207,000	202,000	18,800	8,770	3,440	11,500	8,770	2,960
29	6,080	9,940	12,100	11,500	134,000	185,000	18,800	8,410	3,620	18,800	11,000	6,850
30	5,920	11,100	11,800	11,200	135,000	20,300	8,320	4,150	12,000	33,800	9,940	
31	6,380	11,500	11,100		110,000		8,950		8,500	19,000		

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	10,600	4,290	5,561	0.285	0.33
November	47,600	7,120	14,420	.739	.82
December	84,000	9,220	31,700	1.63	1.88
January	92,800	11,100	40,360	2.07	2.39
February	207,000	11,000	45,410	2.33	2.51
March	465,000	50,100	147,900	7.58	8.74
April	150,000	18,800	57,260	2.94	3.28
May	23,700	8,320	14,540	.746	.86
June	12,200	3,440	6,267	.321	.36
July	33,600	2,900	8,296	.425	.49
August	33,800	3,440	7,181	.368	.41
September	12,300	2,660	4,980	.250	.29
The year	465,000	2,660	32,030	1.64	22.36

ALLEGHENY RIVER BASIN

Brokenstraw Creek at Youngsville, Pa.

Location. - Chain gage, lat. $41^{\circ}51'5''$, long. $79^{\circ}19'5''$, at highway bridge at Youngsville, Warren County, 1,000 feet above mouth of Mathews Run. Zero of gage is 1,187.92 feet above mean sea level.

Drainage area. - 304 square miles.

Records available. - October 1919 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; October 1909 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 22 years (1910-15, 1919-36), 535 second-feet.

Extremes. - Maximum discharge during year, 9,360 second-feet Mar. 27 (gage height, 10.8 feet, from graph based on gage readings) from rating curve extended above 2,500 second-feet; minimum, 28 second-feet at times in August and September (gage height, 0.08 foot).

1909-36: Maximum gage height, 13.2 feet, present datum, Mar. 25, 1913 (discharge not determined); minimum discharge, 19 second-feet Oct. 14, 1934.

Remarks. - Records fair except those for high stages and those for periods of ice effect, which are poor. Discharge for periods of ice effect, Dec. 23 to Jan. 12, Jan. 20 to Feb. 28, determined from gage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	129	119</td										

ALLEGHENY RIVER BASIN

Tionesta Creek at Nebraska, Pa.

Location. - Staff gage, lat. $41^{\circ}28'25''$, long. $79^{\circ}23'5''$, 500 feet below highway bridge at Nebraska, Forest County, a third of a mile below mouth of Coon Creek. Zero of gage is 1,079.00 feet above mean sea level.

Drainage area. - 481 square miles.

Records available. - October 1931 to September 1936 in reports of U. S. Geological Survey; October 1909 to September 1911 in reports of Flood Commission of Pittsburgh, 1911; August 1923 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 11 years (1925-36), 829 second-feet.

Extremes. - Maximum discharge during year, 14,400 second-feet Mar. 17 (gage height, 9.3 feet, from graph based on gage readings); minimum, 34 second-feet Sept. 23 (gage height, 0.18 foot).

1909-11, 1923-36: Maximum discharge, 21,900 second-feet (revised) Mar. 4, 1934 (gage height, 11.4 feet, from graph based on gage readings) from rating curve extended above 15,500 second-feet; minimum, 25 second-feet Sept. 7-10, 25, 1927.

Remarks. - Records fair except those for periods of ice effect, Dec. 4, 5, Dec. 23 to Jan. 17, Jan. 21 to Feb. 27, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	103	238	435	370	270	2,710	2,710	766	255	526	57	93
2	146	200	376	450	260	2,240	2,470	733	233	50	78	
3	135	180	353	550	250	1,820	2,240	1,050	214	177	44	74
4	111	172	350	700	260	1,450	1,720	975	200	133	61	66
5	103	172	360	600	310	2,510	1,440	870	177	116	55	57
6	97	213	530	560	290	2,470	2,470	766	160	103	308	50
7	84	221	391	520	270	1,820	2,590	702	145	93	240	48
8	81	238	410	510	260	1,630	2,020	640	160	83	116	48
9	77	260	1,330	550	240	3,300	1,820	582	395	76	88	48
10	77	238	1,530	900	235	5,000	1,820	493	292	74	72	44
11	75	255	1,260	850	230	7,440	1,820	487	267	74	68	41
12	73	352	1,010	800	220	10,300	1,820	493	255	68	61	41
13	73	800	940	750	210	6,300	1,620	582	190	63	57	42
14	73	905	870	710	220	3,630	1,440	582	157	61	53	46
15	70	645	977	690	230	3,090	1,260	553	139	57	53	46
16	68	553	2,020	680	220	3,630	1,130	466	127	53	63	48
17	64	476	1,620	670	210	8,480	1,050	410	119	51	68	55
18	68	410	1,260	735	200	8,800	870	415	142	48	59	51
19	70	348	1,050	735	195	5,470	835	940	233	48	55	48
20	77	372	905	558	190	3,770	766	905	183	48	61	42
21	75	362	735	540	185	2,960	835	670	127	48	66	37
22	86	335	558	680	182	2,470	1,090	553	103	44	63	37
23	97	326	560	520	180	2,710	835	498	95	48	53	36
24	150	264	490	490	210	4,860	800	456	95	208	63	48
25	165	255	460	440	600	7,110	766	456	90	154	53	66
26	125	264	440	400	2,000	6,260	733	386	90	100	63	86
27	100	242	420	370	6,360	6,470	670	430	100	114	70	63
28	94	317	400	340	4,560	6,890	610	395	86	95	66	57
29	100	615	380	310	3,630	4,730	800	326	83	88	111	53
30	286	503	370	300	3,630	800	308	208	76	130	51	
31	317	370	280	255					70	116		

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	317	64	107	0.222	0.26
November	905	172	358	.744	.83
December	2,020	350	747	1.55	1.79
January	900	280	566	1.18	1.36
February	6,360	180	782	1.63	1.76
March	10,300	1,450	4,438	9.23	10.64
April	2,710	610	1,395	2.90	3.24
May	1,050	255	585	1.22	1.41
June	395	83	171	.356	.40
July	526	44	105	.218	.25
August	308	44	82.0	.170	.20
September	93	36	53.3	.111	.12
The year	10,300	36	786	1.63	22.26

ALLEGHENY RIVER BASIN

011 Creek at Rouseville, Pa.

Location. - Chain gage, lat. $41^{\circ}28'55''$, long. $79^{\circ}41'40''$, at highway bridge 400 feet above mouth of Cherrytree Run, 1 mile above Rouseville, Venango County, and $\frac{1}{4}$ miles above former gaging station. Zero of gage is 1,028.33 feet above mean sea level.

Drainage area. - 300 square miles.

Records available. - June 1932 to September 1936.

Extremes. - Maximum discharge during year, 10,700 second-feet Mar. 27 (gage height, 9.6 feet, from graph based on gage readings); minimum, 27 second-feet Sept. 21-23 (gage height, 1.84 feet).

1932-36: Maximum discharge, that of Mar. 27, 1936; minimum, 22 second-feet July 29, Sept. 5, 7, 1934 (gage height, 1.76 feet).

Remarks. - Records good except those for periods of ice effect, Dec. 23 to Jan. 13, Jan. 19 to Feb. 27, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages based on twice-daily gage readings. Records include discharge of Cherrytree Run. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	96	210	195	150	1,210	1,690	805	128	181	50	82
2	76	94	181	195	150	880	1,390	805	120	110	44	68
3	76	78	154	240	145	842	1,210	2,020	113	94	42	58
4	76	78	151	400	150	805	960	1,040	108	85	40	50
5	70	76	210	350	190	2,130	980	750	106	72	47	46
6	68	113	196	260	170	1,590	2,150	590	101	60	196	39
7	62	133	181	240	160	960	1,910	465	92	54	89	42
8	57	128	277	220	155	1,120	1,210	410	98	54	58	37
9	57	133	1,490	290	150	4,010	1,300	360	118	47	46	34
10	57	123	960	600	145	4,010	1,490	297				

ALLEGHENY RIVER BASIN

French Creek at Carters Corners, Pa.

Location. - Chain gage, lat. $41^{\circ}57'20''$, long. $79^{\circ}52'40''$, at highway bridge at Carters Corners (formerly called Kimmeytown), Erie County, 4 miles northwest of Union City and 5 miles above mouth of South Branch of French Creek. Zero of gage is 1,235.7 feet above mean sea level.

Drainage area. - 208 square miles.

Records available. - October 1919 to September 1920; October 1932 to September 1936 in reports of U. S. Geological Survey; May 1910 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 20 years (1910-16, 1919-29, 1932-36), 409 second-feet.

Extremes. - Maximum discharge during year, 7,660 second-feet Mar. 25 (gage height, 10.6 feet, from graph based on gage readings) from rating curve extended above 4,500 second-feet; minimum, 7.0 second-feet Sept. 11, 19 (gage height, 0.50 foot).

1910-36: Maximum discharge, 9,940 second-feet Mar. 25, 1913, from rating curve extended above 4,500 second-feet; maximum gage height, about 15.2 feet Mar. 12, 1920 (affected by ice); minimum discharge not determined.

Remarks. - Records good except those for extremely high stages, which are fair, and those for periods of ice effect, Dec. 5-7, Dec. 19 to Jan. 12, Jan. 16 to Feb. 25, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations downstream. Discharge for high stages determined from graphs based on twice-daily gage readings.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	92	86	242	240	145	1,860	1,790	560	56	13	15	
2	114	83	208	380	145	1,580	1,150	431	51	40	12	10
3	140	74	189	650	140	770	940	390	51	30	12	13
4	127	68	168	800	140	672	628	331	49	22	12	13
5	118	81	160	680	140	1,240	538	276	45	24	11	10
6	137	163	160	580	140	1,240	1,000	200	45	23	13	11
7	131	186	230	510	135	890	1,000	168	42	20	12	11
8	118	137	640	490	155	840	628	144	45	16	15	9.0
9	99	108	1,800	480	135	1,180	582	131	53	18	17	8.5
10	83	108	1,540	550	130	1,620	560	103	43	12	16	8.5
11	80	116	840	480	130	3,340	560	103	88	18	12	7.5
12	85	149	538	440	150	4,700	840	106	72	17	12	10
13	78	226	452	473	150	1,880	840	178	49	13	10	10
14	69	208	410	538	155	920	890	351	40	15	10	9.0
15	62	166	719	452	140	1,100	628	236	46	13	11	8.5
16	60	137	1,110	380	135	1,720	516	151	36	13	10	9.0
17	60	140	567	320	130	872	431	112	34	15	12	11
18	55	122	474	280	125	465	431	90	45	13	10	13
19	58	103	400	250	125	453	452	211	39	12	10	9.5
20	68	127	340	230	120	550	452	140	31	11	11	10
21	69	217	300	220	120	650	695	116	27	11	12	9.5
22	69	203	280	210	120	560	1,060	92	25	10	11	9.0
23	120	158	260	200	120	1,080	695	78	25	10	11	10
24	122	151	245	190	150	3,780	452	72	27	13	12	8.0
25	103	110	230	180	500	5,980	312	66	26	22	12	17
26	95	106	220	175	4,260	5,300	256	58	26	22	12	17
27	78	104	215	170	4,010	5,180	217	72	24	26	10	22
28	69	164	210	165	2,520	4,680	284	88	19	20	20	18
29	68	422	205	160	2,020	1,840	787	74	23	20	20	16
30	81	350	200	155	1,480	740	64	58	18	19	19	16
31	95		200	150	2,060	63		16	19			
Month												
Maximum												
Minimum												
Mean												
Per square mile												
Run-off in inches												
The year												
5,980												
7.5												
375												
1.80												
24.58												

ALLEGHENY RIVER BASIN

French Creek at Saegertown, Pa.

Location. - Chain gage, lat. $41^{\circ}42'50''$, long. $80^{\circ}8'50''$, at highway bridge at Saegertown, Crawford County, half a mile above mouth of Woodcock Creek.

Zero of gage is 1,093.74 feet above mean sea level.

Drainage area. - 629 square miles.

Records available. - April to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; April 1921 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 15 years, 1,021 second-feet.

Extremes. - Maximum discharge observed during year, 14,000 second-feet Mar. 26 (gage height, 13.80 feet) from rating curve extended above 9,000 second-feet; minimum, 28 second-feet July 22 (gage height, 2.22 feet).

1921-36: Maximum discharge, 17,000 second-feet Jan. 20, 1929 (gage height, 15.9 feet, from graph based on gage readings) from rating curve extended above 9,000 second-feet; minimum, 22 second-feet Oct. 18, 1934 (gage height, 2.10 feet).

Maximum stage known, about 17.9 feet, from floodmark, Mar. 26, 1913 (discharge, not determined).

Remarks. - Records good except those for extremely high and low stages, which are fair, and those for period of ice effect, Dec. 23 to Feb. 27, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for the stations at Carters Corners and at Utica. Discharge for high stages determined from graphs based on twice-daily readings. Regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	229	212	578	450	330	6,190	4,570	1,640	171	200	67	105
2	208	197	461	470	320	3,240	3,240	1,310	163	204	53	85
3	229	178	370	700	310	3,240	2,800	1,820	156	141	53	74
4	255	185	343	1,600								

ALLEGHENY RIVER BASIN

French Creek at Utica, Pa.

Location.—Water-stage recorder, lat. $41^{\circ}26'15''$, long. $79^{\circ}57'20''$, at highway bridge at Utica, Venango County, a third of a mile above Mill Creek. Zero of gage is 1,019.54 feet above mean sea level.

Drainage area.—1,028 square miles.

Records available.—August 1932 to September 1936.

Extremes.—Maximum discharge during year, 16,800 second-feet Mar. 27 (gage height, 11.57 feet) from rating curve extended above 8,000 second-feet; minimum, 56 second-feet July 23 (gage height, 1.09 feet).

1932-36: Maximum discharge, that of Mar. 27, 1936; minimum, 43 second-feet July 30, 1934 (gage height, 1.03 feet).

Maximum stage known, about 15.7 feet during flood of March 1913 (discharge not determined).

Remarks.—Records good except those for extremely high stages and those for periods of ice effect and for period of no gage record, which are fair. Discharge for periods of ice effect, Dec. 23 to Jan. 2, Jan. 25 to Feb. 27, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations upstream. Discharge for period of no gage heights, Apr. 4-17, determined by comparison with records for stations upstream.

ALLEGHENY RIVER BASIN

Cussewago Creek near Meadville, Pa.

Location.—Chain gage, lat. $41^{\circ}40'20''$, long. $80^{\circ}12'55''$, at highway bridge 4 miles northwest of Meadville, Crawford County. Zero of gage is 1,071.77 feet above mean sea level.

Drainage area.—90.2 square miles.

Records available.—October 1918 to September 1920, October 1931 to September 1936 in reports of U. S. Geological Survey; May 1910 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—26 years, 127 second-feet.

Extremes.—Maximum discharge observed during year, 4,630 second-feet Mar. 25 (gage height, 13.30 feet) from rating curve extended above 1,000 second-feet; no flow July 23, Sept. 7.

1910-36: Maximum gage height (estimated), 16.0 feet Mar. 25, 1913 (discharge not determined); no flow July 23, Sept. 7, 1936.

Remarks.—Records good except those for extremely high stages and those for period of ice effect, which are poor. Discharge for period of ice effect, Dec. 22 to Feb. 27, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily readings. Slight regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	316	240	804	720	460	8,830	6,780	2,460	310	209	129	228
2	275	257	658	760	450	6,780	5,820	2,140	290	268	113	203
3	257	243	558	1,370	440	4,720	4,720	2,320	272	272	102	180
4	272	226	442	2,240	430	4,030	3,900	2,260	247	206	111	158
5	291	223	391	2,870	420	4,900	3,200	1,740	224	174	116	136
6	287	243	406	2,660	410	5,260	3,500	1,340	212	150	153	122
7	268	282	518	2,260	400	4,900	4,100	1,120	206	131	136	115
8	268	400	724	1,960	390	4,200	4,500	953	249	122	111	104
9	272	366	2,240	1,950	390	6,000	4,100	831	428	113	104	92
10	257	343	3,790	2,660	380	6,200	3,700	726	313	107	109	84
11	247	338	3,710	2,730	380	6,780	3,500	646	342	107	104	83
12	230	348	2,660	2,520	380	8,620	3,600	610	302	98	92	79
13	217	401	1,960	2,590	390	9,690	3,800	603	321	92	88	77
14	213	458	1,640	2,660	400	9,250	4,000	791	265	84	86	81
15	198	513	1,940	2,520	410	6,010	3,300	990	228	81	88	88
16	186	464	4,040	2,260	400	5,260	2,600	888	200	75	84	92
17	180	416	4,720	1,860	390	5,440	2,100	720	183	72	83	96
18	177	366	3,790	1,590	380	3,800	1,860	652	194	66	79	90
19	180	325	2,880	1,440	370	2,520	1,800	732	191	65	83	83
20	175	316	2,200	1,130	360	2,730	1,860	791	191	63	102	77
21	175	312	1,440	1,020	360	2,870	1,740	777	191	61	113	77
22	204	361	998	990	350	2,660	2,340	628	166	60	153	75
23	236	437	1,100	758	350	3,050	2,730	541	148	61	138	72
24	236	416	980	707	360	7,740	2,140	470	143	193	122	86
25	268	361	900	640	1,000	13,500	1,640	419	136	297	117	111
26	275	320	840	600	5,000	16,000	1,300	381	131	212	124	107
27	254	304	790	570	9,500	16,600	1,130	410	133	291	117	98
28	236	343	750	540	11,000	14,800	1,050	410	126	350	109	104
29	226	442	720	520	10,800	13,000	2,110	386	122	241	184	107
30	217	779	710	500	9,910	2,800	368	191	185	234	234	102
31	217	700	480	7,380	338	338	156	224				

Month			Maximum	Minimum	Mean	Per square mile	Run-off in inches
October			316	175	236	0.230	0.27
November			779	223	361	.351	.39
December			4,720	391	1,613	1.57	1.81
January			2,870	480	1,553	1.51	1.74
February			11,000	350	1,612	1.57	1.69
March			10,600	2,520	7,207	7.01	8.08
April			6,780	1,050	3,057	2.97	3.31
May			2,460	338	920	.895	1.03
June			428	122	222	.216	.24
July			350	60	150	.146	.17
August			234	79	120	.117	.13
September			228	72	107	.104	.12
The year			16,600	60	1,434	1.39	18.98

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.2	10	36	31	20	700	480	127	9.6	11	0.2	12
2	9.2	11	42	33	20	466	510	112	8.6	7.4	.2	11
3	8.8	10	40	40	22	267	452	163	7.8	5.1	1.2	9.4
4	7.4	9.0	36	70	25	225	276	225	6.2	3.8	1.7	7.4
5	5.5	9.2	34	180	23	267	189	145	6.0	2.5	1.8	5.8
6	4.9	14	33	250	22	411	305	97	6.0	1.7	2.0	1.6
7	4.2	15	34	190	21	495	411	62	6.0	1.1	2.2	0
8	4.0	16	101	150	21	452						

ALLEGHENY RIVER BASIN

Sugar Creek at Sugarcreek, Pa.

Location. - Chain gage, lat. $41^{\circ}25'45''$, long. $49^{\circ}52'45''$ at highway bridge three-quarters of a mile north of Sugarcreek, Venango County, three-quarters of a mile above mouth, and 3 miles northwest of Franklin. Zero of gage is 1,016.03 feet above mean sea level.

Drainage area. - 165 square miles.

Records available. - August 1932 to September 1936.

Extremes. - Maximum discharge during year, 6,080 second-feet Feb. 27 (gage height, 7.3 feet, from graph based on gage readings); minimum, 9.2 second-feet Oct. 22; minimum daily discharge, 12 second-feet Oct. 22.

1932-36: Maximum discharge, that of Feb. 27, 1936; minimum, that of Oct.

22, 1935; minimum daily discharge, 10 second-feet Oct. 14, 1934.

Remarks. - Records fair except those for periods of ice effect, Dec. 2-7, Dec. 22 to Jan. 8, Jan. 20 to Feb. 26, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge interpolated for Oct. 6. Discharge for high stages determined from graphs based on twice-daily gage readings. Some regulation at low stages from operation of mills upstream.

ALLEGHENY RIVER BASIN

Clarion River near Piney, Pa.

Location. - At hydroelectric plant of the Clarion River Power Co., lat. $41^{\circ}11'30''$, long. $79^{\circ}26'0''$, 2½ miles upstream from Piney, Clarion County, and 3 miles southwest of Clarion.

Drainage area. - 951 square miles.

Records available. - October 1933 to September 1936 in reports of U. S. Geological Survey; October 1924 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 12 years, 1,514 second-feet.

Remarks. - Discharge computed from power-house records. Part of monthly table corrected for storage. Records furnished by Clarion River Power Co.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	31	80	70	64	574	723	396	85	66	38	58
2	23	27	70	73	62	493	755	546	82	46	36	46
3	22	25	60	150	62	443	574	820	74	54	38	41
4	22	23	50	290	64	443	520	632	75	52	50	38
5	21	27	41	220	70	493	452	374	64	44	58	32
6	21	42	42	180	64	574	1,100	311	66	41	142	35
7	21	36	53	160	60	420	787	266	62	35	61	34
8	17	47	167	150	57	483	602	232	66	34	45	30
9	21	41	844	375	54	2,040	520	206	72	31	41	26
10	19	40	328	400	52	1,200	723	186	77	32	35	26
11	19	55	265	328	50	1,170	632	174	82	27	34	26
12	18	69	246	285	49	1,800	787	172	78	24	29	22
13	16	106	197	350	48	762	574	177	72	27	30	26
14	19	100	201	328	50	632	493	172	61	28	21	28
15	18	76	393	305	53	602	352	149	59	24	32	32
16	15	69	928	265	50	692	374	140	55	26	34	25
17	19	52	485	214	47	574	352	130	50	22	41	43
18	16	58	328	214	45	468	332	156	64	22	24	26
19	18	51	285	161	44	493	292	332	69	21	26	27
20	21	49	228	180	43	468	273	209	61	22	48	21
21	23	51	182	155	42	443	332	161	54	21	36	23
22	12	51	150	150	42	443	396	144	45	21	32	20
23	55	44	130	130	42	520	332	124	41	21	28	22
24	47	33	100	115	44	2,720	273	115	42	168	28	26
25	31	29	88	105	350	4,710	266	109	41	53	31	40
26	29	39	80	95	1,600	3,130	242	99	45	35	32	28
27	27	34	76	86	3,980	3,420	203	219	38	183	31	26
28	27	67	74	80	1,510	1,960	222	120	40	78	26	26
29	25	123	72	74	956	1,120	622	103	38	55	96	30
30	34	95	71	70	887	420	98	118	48	61	27	
31	21	70	66	755				90	42	54		
Month			Maximum	Minimum	Mean	Per square mile	Run-off in inches					
			55	12	23.2	0.140	0.16					
			123	23	53.0	.319	.36					
			928	41	206	1.24	1.43					
			400	66	187	1.13	1.30					
			3,980	42	333	2.01	2.17					
			4,710	420	1,127	6.79	7.85					
			1,100	203	484	2.92	3.26					
			820	90	231	1.39	1.60					
			118	38	62.5	.377	.42					
			183	21	45.3	.273	.31					
			142	21	42.5	.256	.30					
			58	20	30.3	.183	.20					
			4,710	12	236	1.42	19.34					

Month	Observed			Storage	Corrected for storage		
	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October.....	343	57	122	+83	205	0.216	0.25
November....	1,650	83	802	-28	774	.814	.91
December....	4,420	270	1,725	+23	1,748	1.84	2.12
January....	2,070	588	1,213	-1	1,212	1.27	1.46
February....	5,680	63	1,193	+14	1,207	1.27	1.37
March.....	38,400	3,060	8,571	+87	8,658	9.10	10.49
April.....	4,900	406	2,588	+34	2,622	2.76	3.08
May.....	1,740	174	889	+3	892	.938	1.08
June.....	1,050	63	357	+1	358	.376	.42
July.....	811	63	160	+1	161	.169	.19
August....	641	63	213	-7	206	.217	.25
September....	459	62	97.5	-3	97.2	.102	.11
The year.....	38,400	57					

ALLEGHENY RIVER BASIN

Redbank Creek at St. Charles, Pa.

Location.—Chain gage, lat. $40^{\circ}59'40''$, long. $79^{\circ}23'30''$, at industrial railroad bridge at St. Charles, Clarion County, a quarter of a mile below mouth of Leatherwood Creek. Zero of gage is 976.24 feet above mean sea level.

Drainage area.—528 square miles.

Records available.—October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; October 1909 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—23 years (1910-14, 1915-16, 1918-36), 875 second-feet.

Extremes.—Maximum discharge during year, 35,200 second-feet Mar. 18 (gage height, 18.60 feet, from floodmarks) from rating curve extended on basis of slope-area determination; minimum, 29 second-feet July 20-23, Sept. 23 (gage height, 0.13 foot).

1909-36: Maximum discharge, that of Mar. 18, 1936; minimum, 10 second-feet Aug. 9, 1910.

Remarks.—Records fair except those for periods of ice effect, Dec. 3-7, Dec. 23 to Jan. 3, Jan. 22, Jan. 25 to Feb. 26, which are poor and were determined from gage heights and weather records, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	172	258	512	270	320	2,730	1,290	376	149	151	55	174
2	274	194	392	320	310	1,370	2,190	376	136	145	52	134
3	262	191	330	600	300	2,190	2,190	356	128	111	43	122
4	208	172	280	1,080	290	2,450	1,820	319	124	82	40	92
5	172	188	260	1,080	280	3,640	1,490	302	115	78	40	74
6	139	254	260	870	280	3,020	2,420	270	92	67	82	67
7	128	310	350	792	270	2,450	2,190	270	74	58	70	59
8	120	365	741	755	265	255	1,980	1,940	240	80	58	54
9	115	450	2,390	1,480	260	1,950	1,710	226	162	48	96	50
10	96	392	2,450	1,700	255	2,530	1,710	212	136	45	78	52
11	110	392	2,190	1,480	250	4,560	1,490	199	199	47	59	43
12	105	420	1,940	1,220	240	8,640	1,290	199	136	51	51	37
13	100	910	1,480	1,170	230	5,740	1,390	199	186	52	40	60
14	96	1,420	2,060	1,480	225	4,010	1,110	199	162	43	40	50
15	110	1,170	2,790	1,320	230	3,790	950	186	126	38	37	38
16	105	950	5,050	1,120	290	8,730	950	162	117	40	33	33
17	96	680	3,970	1,040	310	20,300	810	162	90	39	32	37
18	91	578	2,730	950	270	25,300	720	175	99	35	33	35
19	91	480	2,060	1,080	250	13,000	633	362	115	32	47	37
20	98	450	1,540	1,040	240	8,390	606	660	91	30	49	39
21	91	420	990	755	230	5,560	606	438	86	30	44	36
22	105	392	680	650	220	3,200	690	302	74	30	84	33
23	115	365	560	450	210	2,560	662	255	70	29	74	30
24	125	306	480	450	200	2,580	530	240	82	55	65	35
25	130	292	400	450	2,500	2,450	460	226	64	67	74	48
26	128	234	370	410	4,500	2,110	438	199	55	75	186	43
27	105	262	340	390	6,260	2,220	396	186	55	174	115	48
28	96	302	320	370	4,680	2,560	396	212	58	151	94	40
29	117	674	300	350	2,870	2,300	396	199	58	124	240	74
30	190	290	340	1,770	417	174	151	94	270	101		
31	324	610	280	330	1,410	162		71	255			

Month			Maximum	Minimum	Mean	Per square mile	Run-off in inches
October			324	91	136	0.258	0.30
November			1,420	172	469	.888	.99
December			5,050	260	1,251	2.37	2.73
January			1,700	270	831	1.57	1.81
February			6,260	200	932	1.77	1.91
March			28,300	1,370	5,016	9.50	10.95
April			2,420	396	1,130	2.14	2.39
May			660	162	259	.491	.57
June			199	55	109	.206	.23
July			174	29	69.4	.131	.15
August			270	32	82.8	.157	.18
September			174	30	59.2	.112	.12
The year			25,300	29	866	1.64	22.33

ALLEGHENY RIVER BASIN

Mahoning Creek near Dayton, Pa.

Location.—Chain gage, lat. $40^{\circ}54'5"$, long. $79^{\circ}13'35"$, at Independence Bridge, three-quarters of a mile above mouth of Foundry Run, and 1 3/4 miles northeast of Dayton, Armstrong County. Zero of gage is 1,095.24 feet above mean sea level.

Drainage area.—321 square miles.

Records available.—October 1920 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; August 1916 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—16 years (1920-36), 554 second-feet.

Extremes.—Maximum discharge observed during year, 22,800 second-feet Mar. 18 (gage height, 14.53 feet) from rating curve extended on basis of slope-area determination; minimum, 23 second-feet July 18-21, Aug. 2 (gage height, 1.59 feet). 1916-36: Maximum discharge, that of Mar. 18, 1936; minimum, 8.0 second-feet Oct. 17, 1928 (gage height, 1.40 feet).

Remarks.—Records fair except those for periods of ice effect, Dec. 23 to Jan. 3, Jan. 21 to Feb. 27, which are poor and were determined from gage heights, Weather Bureau records, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Slight regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	77	247	165	290	1,320	740	197	59	111	28	223
2	104	68	186	200	270	749	910	179	48	59	24	176
3	143	64	143	700	250	1,230	1,280	179	48	52	30	144
4	104	73	123	1,520	250	1,980	960	166	45	53	38	120
5	73	64	110	1,230	245	2,580	910	153	45	45	57	90
6	68	59	117	915	235	915	2,630	147	41	41	108	81
7	64	147	200	749	230	1,370	1,950	140	45	41	106	68
8	59	209	267	749	220	1,190	1,570	134	48	37	63	53
9	55											

ALLEGHENY RIVER BASIN

Crooked Creek near Ford City, Pa.

Location.—Chain gage, lat. $40^{\circ}43'0''$, long. $79^{\circ}31'50''$, at highway bridge $3\frac{1}{4}$ miles south of Ford City, Armstrong County, and 5 miles above confluence with Allegheny River. Zero of gage is 786.12 feet above mean sea level.

Drainage area.—280 square miles.

Records available.—October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; October 1909 to September 1936 in reports of Pennsylvania Department of Forests and Waters. Records with datum 3.32 feet lower obtained at a site three quarters of a mile downstream prior to July 31, 1933.

Average discharge.—25 years (1910-13, 1914-36), 436 second-feet.

Extremes.—Maximum discharge during year, 21,000 second-feet Mar. 18 (gage height, 17.86 feet, from floodmark) from rating curve extended on basis of contracted-opening determination; minimum, 1.8 second-feet July 23 (gage height, 0.74 foot).

1909-36: Maximum discharge, that of Mar. 18, 1936; minimum observed, 0.1 second-foot Sept. 11, 25, 26, 1932.

Remarks.—Records fair except those for periods of ice effect, Dec. 2-7, Dec. 22 to Jan. 3, Jan. 21 to Feb. 26, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Slight regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	34	110	140	200	725	400	147	19	16	12	178
2	253	37	100	150	190	570	435	105	17	23	10	123
3	178	30	85	800	190	635	435	100	15	25	14	102
4	93	41	75	3,350	210	607	382	96	15	16	5.1	79
5	70	39	65	1,470	180	1,400	435	82	13	13	8.8	58
6	63	67	65	875	170	810	1,140	83	10	12	208	43
7	35	85	140	775	160	680	1,410	77	10	9.6	157	55
8	31	128	201	680	155	468	692	71	9.2	8.4	66	30
9	25	167	1,040	1,470	160	400	680	51	6.8	4.5	40	25
10	33	138	1,220	3,350	150	280	635	54	11	5.4	25	20
11	25	121	875	2,150	145	541	635	49	24	5.1	19	17
12	23	232	530	1,040	140	1,750	570	46	39	6.4	14	14
13	29	3,840	775	825	135	1,790	550	43	710	6.0	11	35
14	27	2,040	1,280	985	130	1,160	470	54	743	10	4.2	33
15	26	648	2,150	825	140	1,420	452	53	147	6.4	8.0	20
16	28	530	1,990	635	300	1,930	382	40	98	4.5	9.2	17
17	22	365	1,540	635	330	10,200	330	58	59	4.8	7.6	16
18	23	253	930	635	260	13,900	282	42	49	4.5	12	14
19	21	226	680	1,160	220	4,250	267	63	50	3.9	15	13
20	28	189	470	825	190	2,100	239	79	23	3.0	35	10
21	30	178	330	620	170	1,510	267	62	24	2.6	128	8.8
22	29	157	280	500	150	1,110	226	40	20	2.2	51	7.2
23	29	124	250	440	140	1,080	201	32	20	2.2	58	8.8
24	40	98	220	390	150	914	167	29	16	4.2	115	14
25	54	83	190	340	2,000	633	157	51	13	13	213	7.2
26	39	103	180	310	4,000	561	147	28	16	13	138	8.0
27	33	77	165	290	5,230	691	138	29	14	35	110	15
28	33	87	155	280	1,540	740	125	51	12	253	65	12
29	31	91	145	240	985	583	119	23	8.8	167	126	16
30	36	91	140	220	548	107	22	14	114	490	629	
31	71	135	210	480	20	21	267					
Month				Maximum	Minimum	Mean	Per square mile	Run-off in inches				
October				253	21	48.0	0.171	0.20				
November				3,840	30	543	1.22	1.36				
December				2,150	65	533	1.90	2.19				
January				3,350	140	868	3.06	3.53				
February				5,230	130	624	2.23	2.40				
March				13,900	280	1,757	6.28	7.24				
April				1,410	107	416	1.48	1.65				
May				147	20	55.5	.198	.23				
June				743	6.8	73.5	.282	.29				
July				255	2.2	26.3	.094	.11				
August				490	4.2	79.4	.284	.33				
September				629	7.2	55.6	.191	.21				
The year				13,900	2.2	406	1.45	19.74				

ALLEGHENY RIVER BASIN

Stony Creek at Johnstown, Pa.

Location.—Wire-weight gage, lat. $40^{\circ}19'0''$, long. $78^{\circ}54'50''$, at Poplar Street Bridge, at Johnstown, Cambria County, $\frac{1}{4}$ miles above confluence with Little Conemaugh River. Zero of gage is 1,154.0 feet above mean sea level.

Drainage area.—467 square miles.

Records available.—October 1918 to September 1921, October 1931 to March 1936 in reports of U. S. Geological Survey; July 1913 to March 1936 in reports of Pennsylvania Department of Forests and Waters (discontinued).

Average discharge.—21 years (1914-35), 780 second-feet.

Extremes.—Maximum discharge during period, 59,000 second-feet Mar. 18 (gage height, 30.28 feet, from floodmark) from rating curve extended on basis of slope-area and contracted-opening determinations; minimum, 37 second-feet Oct. 26 (gage height, 0.98 foot).

1913-35: Maximum discharge, that of Mar. 18, 1936; minimum (estimated), 5 second-feet Sept. 8, 1929; minimum daily discharge observed, 13 second-feet Oct. 25, 1930.

Remarks.—Records fair. Discharge for periods of ice effect, Dec. 23 to Jan. 2, Feb. 3-25, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for period of no gage record, Mar. 18-31, determined by comparison with records for stations mentioned above. Discharge for high stages determined from graphs based on twice-daily gage readings. Diurnal regulation at low stages. Water supply for Cambria plant of Bethlehem Steel Co. diverted from Quehoning Reservoir not included in records except in part of monthly table. Record of monthly diversion furnished by Bethlehem Steel Co. Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	91	206	280	328	3,360						
2	71	61	177	290	309	2,640						
3	71	53	162	464	290	1,950						
4	56	57	126	680	400	1,610						
5	46	54	109	580	350	3,800						
6	51	64	149	486	310	3,040						
7	53	69	155	486	290	2,270</						

ALLEGHENY RIVER BASIN

Kiskiminetas River at Avonmore, Pa.

Location.- Wire-weight gage, lat. $40^{\circ}32'5''$, long. $79^{\circ}27'55''$, at highway bridge at Avonmore, Westmoreland County, 1 mile above mouth of Long Run. Zero of gage is 805.64 feet above mean sea level.

Drainage area.- 1,723 square miles.

Records available.- June 1907 to September 1913, October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; May 1907 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 29 years, 2,999 second-feet.

Extremes.- Maximum discharge during year, 200,000 second-feet Mar. 18 (gage height, 47.2 feet, from floodmarks) from rating curve extended on basis of slope-area determination; minimum, 175 second-feet July 21, 22 (gage height, 2.85 feet).

1907-36: Maximum discharge, that of Mar. 18, 1936; minimum observed, 60 second-feet Sept. 18-27, 1908 (gage height, 1.6 feet).

Remarks.- Records fair except those for periods of ice effect and no gage record, which are poor. Discharge for periods of ice effect, Dec. 23 to Jan. 3, Jan. 21 to Feb. 25, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations on tributaries upstream. Discharge for period of no gage record, Mar. 18 to Apr. 7, determined by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Slight regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	412	595	960	1,900	2,000	9,780	4,800	1,450	612	540	572	3,680
2	528	496	960	2,200	1,900	8,670	4,400	1,400	580	620	390	2,510
3	560	412	828	3,000	1,900	7,140	4,000	1,300	580	588	369	2,180
4	496	387	870	5,620	2,400	6,060	3,600	1,350	516	446	390	1,650
5	438	412	668	5,760	2,100	10,200	3,300	1,300	484	446	572	1,500
6	387	528	870	4,160	1,900	9,780	26,500	1,200	453	432	2,160	1,150
7	387	496	915	3,800	1,700	7,300	14,200	1,100	450	410	1,970	925
8	387	560	1,050	3,680	1,600	6,140	9,400	1,020	...	...	...	835
9	387	630	5,440	4,980	1,500	5,380	7,140	1,020	468	397	700	745
10	412	595	6,360	8,490	1,450	7,040	8,310	970	492	459	540	660
11	412	528	5,760	6,510	1,400	11,000	8,310	925	975	745	425	620
12	387	808	4,410	5,340	1,350	20,000	7,970	880	1,200	484	432	745
13	412	6,960	4,040	4,800	1,350	14,400	6,820	970	2,810	397	432	835
14	438	7,190	6,060	5,200	1,500	9,390	5,620	1,420	3,220	334	397	1,450
15	467	3,680	8,670	5,060	1,800	9,240	4,930	1,060	1,750	308	348	790
16	496	2,550	12,200	4,800	2,500	11,100	4,410	880	1,100	308	548	745
17	412	2,120	8,490	4,160	2,800	52,400	3,800	835	284	596	700	700
18	387	1,820	6,060	3,920	2,500	135,000	3,320	745	835	242	508	604
19	412	1,620	4,930	6,210	2,000	37,800	2,960	970	1,500	254	404	556
20	412	1,520	4,410	5,200	1,800	15,500	2,730	1,450	1,350	230	566	524
21	387	1,420	3,320	4,500	1,700	9,750	2,510	1,100	880	185	835	508
22	412	1,420	2,990	4,000	1,600	8,330	2,510	880	700	195	620	492
23	467	1,230	2,700	3,600	1,600	7,760	2,290	745	556	206	745	476
24	467	915	2,500	3,400	1,800	7,590	2,070	700	524	559	3,280	484
25	467	828	2,400	3,100	8,000	7,140	1,850	700	524	925	3,100	524
26	438	785	2,300	2,900	29,500	6,210	1,750	700	524	745	3,110	484
27	412	915	2,200	2,700	35,800	7,540	1,750	700	564	4,670	446	460
28	364	915	2,100	2,500	22,500	8,160	1,750	835	492	1,400	2,920	460
29	364	1,050	2,000	2,300	12,000	6,240	1,650	745	446	1,300	11,000	2,340
30	438	1,520	1,950	2,200	5,710	1,550	612	790	1,550	880	12,200	6,010
31	668	1,900	2,100	5,150	5,150	5,150	612	612	612	5,480	5,480	5,480

Month		Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	.....	668	364	436	0.253	0.29
November	.....	7,190	387	1,497	.869	.97
December	.....	12,200	668	3,558	2.07	2.39
January	.....	8,490	1,900	4,132	2.40	2.77
February	.....	33,800	1,350	5,171	3.00	3.24
March	.....	135,000	5,150	15,250	8.85	10.20
April	.....	25,500	1,550	5,207	3.02	3.57
May	.....	1,450	612	989	.574	.66
June	.....	3,220	432	875	.508	.57
July	.....	1,400	185	516	.299	.34
August	.....	12,200	348	1,990	1.15	1.33
September	.....	6,010	446	1,188	.689	.77
The year	.....	135,000	185	3,404	1.98	26.90

ALLEGHENY RIVER BASIN

Blacklick Creek at Blacklick, Pa.

Location.- Chain gage, lat. $40^{\circ}28'25''$, long. $79^{\circ}12'15''$, at highway bridge at Grattan, a quarter of a mile northwest of Blacklick, Indiana County, and three-quarters of a mile below mouth of Two Lick Creek. Zero of gage is 945.94 feet above mean sea level.

Drainage area.- 390 square miles.

Records available.- August 1904 to September 1913, October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; August 1904 to December 1905, January 1907 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.- 29 years (1907-36), 667 second-feet.

Extremes.- Maximum discharge during year, 51,700 second-feet Mar. 18 (gage height, 15.88 feet, from floodmark) from rating curve extended on basis of slope-area determination; minimum, 39 second-feet July 18, 19, 22, 23.

1904-36: Maximum discharge, that of Mar. 18, 1936; minimum, 6 second-feet Sept. 12, 16-27, 1908 (gage height, 1.88 feet).

Remarks.- Records fair except those for periods of ice effect, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for periods of no gage record, Jan. 5, 6, Mar. 19-21, Apr. 12, determined by comparison with records for stations mentioned above. Discharge for high stages determined from graphs based on twice-daily gage readings. Slight diurnal regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	96	210	310	340	2,120	920	258	100	188	63	830
2	119	86	185	1,740	320	1,740	920	258	92	115	56	630
3	88	70	174	1,740	300	1,440	920	302	87	87	52	555
4	76	70	1									

ALLEGHENY RIVER BASIN

Loyalhanna Creek at New Alexandria, Pa.

Location.—Wire-weight gage, lat. $40^{\circ}23'40''$, long. $79^{\circ}25'55''$, at highway bridge at New Alexandria, Westmoreland County, 1 $\frac{3}{4}$ miles below mouth of Crabtree Creek. Zero of gage is 917.26 feet above mean sea level.

Drainage area.—265 square miles.

Records available.—October 1919 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; August 1913 to July 1923, November 1925 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—13 years (1919-22, 1926-36), 445 second-feet.

Extremes.—Maximum discharge during year, 31,000 second-feet Mar. 18 (gage height, 20.96 feet, from floodmark) from rating curve extended on basis of slope-area and contracted-opening determinations; minimum, 12 second-feet July 22, Aug. 3 (gage height, 1.98 feet).

1913-23, 1925-36: Maximum discharge, that of Mar. 18, 1936; minimum, 2.4 second-feet Oct. 3, 1927 (gage height, 1.46 feet).

Remarks.—Records fair except those for periods of ice effect, Dec. 23 to Jan. 3, Jan. 26 to Feb. 14, which are poor and were determined from gage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Some regulation at low stages from power operations upstream.

MONONGAHELA RIVER BASIN

Monongahela River at Charleroi, Pa.

Location.—Water-stage recorder, lat. $40^{\circ}8'30''$, long. $79^{\circ}53'35''$, 1,100 feet above dam at Lock 4, at Charleroi, Washington County, half a mile below mouth of Maple Creek. Zero of gage is 735.33 feet above mean sea level.

Drainage area.—5,213 square miles.

Records available.—March 1886 to March 1905, October 1933 to September 1936 in reports of U. S. Geological Survey; October 1933 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Extremes.—Maximum discharge during year, 138,000 second-feet Mar. 18 (gage height, 22.47 feet); minimum, 25 second-feet Sept. 28 (gage height, 2.08 feet); minimum daily discharge, 62 second-feet Sept. 20, 28.29.

1886-1905, 1933-36: Maximum discharge (estimated), 156,000 second-feet (revised) July 11, 1888 (gage height, 42.0 feet on lower gage at old lock downstream, or about 26.1 feet on present gage); minimum, not determined.

Remarks.—Records good except those below 5,000 second-feet and those for period of ice effect, which are poor. Discharge for period of ice effect, Jan. 27 to Feb. 3, determined from gage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Regulation at low stages from operation of locks upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	48	109	230	280	1,000	588	176	66	60	28	271
2	97	56	97	240	270	759	535	191	60	72	26	191
3	72	50	90	1,000	270	818	480	168	54	60	12	198
4	48	40	94	1,950	370	730	380	161	54	43	28	168
5	43	56	90	1,130	310	938	434	150	49	43	37	105
6	56	56	106	588	270	730	3,150	136	43	49	297	105
7	50	56	97	730	240	616	1,580	125	43	49	161	98
8	31	78	234	644	220	514	1,130	118	66	37	88	92
9	43	70	1,200	1,060	210	500	908	112	66	30	69	85
10	50	84	780	1,410	200	655	1,270	112	54	21	52	69
11	103	97	663	1,270	190	894	1,200	98	146	92	40	79
12	97	160	578	759	200	1,570	1,060	86	118	32	40	69
13	78	230	692	878	220	1,220	938	95	560	28	32	150
14	72	550	1,460	878	290	968	730	150	183	23	28	154
15	84	380	1,390	759	404	981	644	125	136	23	25	118
16	67	254	1,530	701	588	1,550	506	112	98	19	28	66
17	56	246	1,020	616	560	13,500	429	92	88	23	23	82
18	56	203	840	759	454	20,000	380	98	154	16	28	69
19	50	192	634	730	404	4,660	356	214	101	14	32	72
20	58	163	395	644	356	2,540	338	132	72	14	32	79
21	61	163	324	560	288	2,060	310	112	60	14	35	85
22	70	142	302	533	246	1,730	315	105	52	12	49	66
23	70	129	280	533	222	1,800	315	98	46	19	52	69
24	90	81	270	506	267	1,600	297	222	49	132	66	54
25	81	70	260	480	3,510	1,440	254	112	43	92	52	72
26	67	84	250	420	5,720	1,130	222	85	43	54	154	66
27	48	75	245	380	4,110	1,810	206	105	46	49	324	60
28	40	109	240	350	2,260	1,230	214	101	28	79	168	72
29	75	103	235	510	1,340	1,000	191	85	40	66	2,310	533
30	67	100	230	300	830	191	79	60	69	921	206	
31	61	230	290	701			69	40	429			
Month				Maximum	Minimum	Mean	Per square mile	Run-off in inches				
October				103	31	65.3	0.246	0.28				
November				550	56	137	.517	.58				
December				1,550	90	483	1.82	2.10				
January				1,950	230	698	2.63	3.03				
February				5,720	190	837	3.16	3.41				
March				20,000	500	2,273	8.58	9.89				
April				3,150	191	645	2.43	2.71				
May				222	69	125	.464	.53				
June				560	28	89.3	.337	.38				
July				132	12	44.3	.167	.19				
August				2,310	12	183	.691	.80				
September				533	54	120	.453	.51				
The year				20,000	12	475	1.79	24.41				

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	554	4,680	2,710	3,920	1,400	15,800	12,000	3,430	1,480	260	4,020	1,440
2	844	2,890	2,860	3,860	1,350	13,200	13,000	2,640	1,270	380	1,490	1,270
3	694	1,940	3,180	17,000	1,350	15,400	12,500	2,140	1,070	1,150	983	1,580
4	550	1,690	2,740	67,000	6,550	13,800	13,400	2,680	825	2,920	749	1,720
5	920	1,970	2,840	48,600	10,500	13,100	10,100	3,4				

MONONGAHELA RIVER BASIN

South Fork of Tenmile Creek at Jefferson, Pa.

Location.—Chain gage, lat. $49^{\circ}55'25''$, long. $80^{\circ}4'25''$, at highway bridge 1 mile southwest of Jefferson, Greene County, and $3\frac{1}{4}$ miles below mouth of Ruff Creek. Zero of gage is 852.54 feet above mean sea level.

Drainage area.—180 square miles.

Records available.—October 1931 to September 1936.

Extremes.—Maximum discharge during year, 7,830 second-feet Mar. 17 (gage height, 13.54 feet, from floodmark) from rating curve extended above 1,500 second-feet; minimum, 0.4 second-foot at times in July and August (gage height, -0.03 foot). 1931-36: Maximum discharge, that of Mar. 17, 1936; minimum, 0.1 second-foot Sept. 22 to Oct. 2, 1932.

Remarks.—Records poor. Discharge for periods of ice effect, Dec. 25 to Jan. 3, Jan. 20 to Feb. 22, determined from gage heights, weather records, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Slight regulation at low stages from pumpage at Waynesburg.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.					
1	4.1	10	24	65	100	425	238	76	3.9	0.8	5.1	49					
2	10	11	24	200	100	264	392	68	3.6	1.5	3.4	20					
3	9.9	11	23	700	100	380	396	53	3.0	1.7	2.6	17					
4	7.3	11	22	880	140	525	264	41	2.6	1.8	2.3	14					
5	7.3	10	22	560	300	595	179	40	2.4	2.3	2.3	10					
6	5.1	12	23	395	280	595	3,700	39	2.1	1.30	1.9	6.0					
7	4.9	14	25	880	250	525	2,040	36	2.6	48	2.1	4.6					
8	4.7	13	168	560	230	410	490	27	6.0	14	2.1	3.1					
9	4.5	12	560	980	210	294	630	26	3.6	6.4	1.8	2.7					
10	4.1	12	425	930	200	218	830	23	3.4	3.5	1.8	2.4					
11	3.5	20	350	595	190	190	525	22	30	2.6	1.6	2.0					
12	7.1	74	278	560	190	269	425	20	18	2.4	1.2	1.7					
13	12	630	380	425	200	276	365	19	8.8	2.1	1.1	1.8					
14	20	595	1,670	320	1,000	261	306	26	7.6	1.8	.8	1.7					
15	14	560	790	292	2,300	290	238	23	6.0	1.5	.7	2.4					
16	10	595	1,380	230	1,600	1,520	200	20	3.5	1.0	.6	1.6					
17	17	410	560	200	1,250	5,600	159	14	3.2	.6	.6	1.1					
18	15	278	410	230	1,050	1,980	136	14	2.9	.5	.4	.8					
19	13	166	365	380	900	1,230	124	17	2.7	.4	.4	.6					
20	12	70	292	350	800	1,160	93	17	2.6	.4	.4	.7					
21	8.5	56	175	280	600	2,390	90	14	2.4	.4	.5	.6					
22	11	43	200	230	500	1,960	81	12	2.1	.4	.4	.6					
23	15	34	186	200	490	1,550	74	11	2.0	.5	.4	.5					
24	28	26	162	170	490	1,400	59	9.2	1.8	.8	.4	.5					
25	26	19	130	140	3,570	985	53	7.2	1.8	.6	.4	.6					
26	25	18	100	130	2,590	771	59	7.2	1.6	.8	.6	.7					
27	21	18	80	120	1,730	592	72	6.4	.9	9.3	3.9	.7					
28	17	26	70	110	830	494	74	6.0	.5	337	1.9	.7					
29	13	36	63	105	630	389	56	5.3	.5	66	552	.5					
30	11	29	60	100	318	90	5.3	.7	23	241	241	.6					
31	10		60	100	275		4.4		9.6	96							
Month				Maximum	Minimum	Mean	Per square mile	Run-off in inches									
October		28	3.5	12.0	0.067	0.08											
November		630	10	127	.706	.79											
December		1,670	22	293	1.65	1.88											
January		980	65	368	2.04	2.35											
February		3,570	100	787	4.37	4.71											
March		5,600	190	907	5.04	5.81											
April		3,700	53	415	2.31	2.58											
May		76	4.4	22.9	.127	.15											
June		30	.5	4.43	.025	.03											
July		337	.4	29.1	.162	.19											
August		562	.4	29.7	.165	.19											
September		49	.5	4.98	.028	.03											
The year		5,600	.4	248	1.38	18.79											

MONONGAHELA RIVER BASIN

Youghiogheny River at Connellsville, Pa.

Location.—Water-stage recorder, lat. $40^{\circ}1'5''$, long. $79^{\circ}35'40''$, at Crawford Avenue Bridge, at Connellsville, Fayette County, three-quarters of a mile above mouth of Mounts Creek. Zero of gage is 860.13 feet above mean sea level.

Drainage area.—1,326 square miles.

Records available.—October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; July 1908 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—27 years (1908-18, 1919-36), 2,482 second-feet.

Extremes.—Maximum discharge during year, 92,500 second-feet Mar. 18 (gage height, 20.28 feet) from rating curve extended above 40,000 second-feet; minimum, 100 second-feet July 21, 22 (gage height, 0.70 foot); minimum daily discharge, 155 second-feet July 21.

1908-36: Maximum discharge, that of Mar. 18, 1936 (maximum formerly published for Mar. 29, 1924, found in error; revised gage height, 19.4 feet, from floodmark); minimum, 11 second-feet Sept. 23, 26, 27, 1908, Oct. 18, 1910 (gage height, 0.11 foot).

Remarks.—Records good except those for extremely high stages and those for period of ice effect, which are fair. Discharge for period of ice effect, Dec. 28 to Jan. 4, determined from gage height, weather records, and by comparison with record for station at Sutersville. Discharge determined for periods of recorder failure, July 29-31, Sept. 29, 30, determined by comparison with the record for the station at Sutersville. Regulation from operation of hydroelectric plants upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	352	507	850	850	1,250	8,760	4,320	1,560	409	669	881	1,920
2	628	370	684	1,100	1,220	7,160	3,980	1,500	441	514	698	1,400
3	530	402	580	4,500	1,120	5,870	4,270	1,150	397	378	510	1,680
4	470	408	501	5,800	1,290	5,260	3,710	1,080	394	275	446	1,500
5	402	368	342	5,450	1,680	7,990	3,260	1,490	311	361	673	1,210
6	542	436	520	3,890	1,810	7,380	12,800	1,440	261	295	1,700	980
7	400	422	794	3,710	1,680	5,840	13,300	1,380	382	446	2,360	720
8	284	400	1,580	4,720	1,330	4,720	8,300	1,350	1,010	379	1,310	564
9	320	560	6,000	5,630	1,330	4,590	6,290	1,260	989	372	874	564
10	290	558	5,650	10,800	1,170	6,490	7,160	1,010				

MONONGAHELA RIVER BASIN

Youghiogheny River at Sutersville, Pa.

Location.—Wire-weight gage, lat. $40^{\circ}14'25''$, long. $79^{\circ}48'20''$, at highway bridge at Sutersville, Westmoreland County, $\frac{1}{4}$ miles below mouth of Sewickley Creek. Zero of gage is 733.14 feet above mean sea level.

Drainage area.—1,715 square miles.

Records available.—October 1931 to September 1936 in reports of U. S. Geological Survey; June 1915 to September 1929, June 1931 to September 1936 in reports of Pennsylvania Department of Forests and Waters (discontinued).

Average discharge.—14 years (1920-29, 1931-36), 2,901 second-feet.

Extremes.—Maximum discharge during year, 100,000 second-feet Mar. 18 (gage height, 30.65 feet, from flood marks) from rating curve extended on basis of slope-area determination; minimum observed, 244 second-feet July 22 (gage height, 2.37 feet); minimum daily discharge, 271 second-feet July 22.

1915-29, 1931-36: Maximum discharge, that of Mar. 18, 1936; minimum gage height, 1.96 feet July 10, 1918 (discharge not determined).

Remarks.—Records fair except those for periods of ice effect, Dec. 22 to Jan. 9, Jan. 22 to Feb. 27, which are poor and were determined from gage height, weather records, one discharge measurement, and by comparison with records for stations upstream. Discharge for high stages determined from graphs based on twice-daily readings. Diurnal regulation from operation of hydroelectric plants upstream.

MONONGAHELA RIVER BASIN

Casselman River at Markleton, Pa.

Location.—Chain gage, lat. $39^{\circ}51'35''$, long. $79^{\circ}13'40''$, at highway bridge at Markleton, Somerset County, 2 miles southwest of Casselman and 7 miles below mouth of Coxes Creek. Zero of gage is 1,655.29 feet above mean sea level.

Drainage area.—382 square miles.

Records available.—August to September 1913, October 1920 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; August 1913 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—16 years (1920-36), 610 second-feet.

Extremes.—Maximum discharge during year, 35,800 second-feet Mar. 17 (gage height, 18.4 feet, from floodmark) from rating extended on basis of slope-area determination; minimum, 11 second-feet July 23 (gage height, 1.46 feet).

1913-36: Maximum discharge, that of Mar. 17, 1936; minimum, 11 second-feet Aug. 13, 1930, July 23, 1936.

Remarks.—Records fair except those for periods of ice effect, Dec. 3-8, Dec. 23 to Jan. 3, Jan. 29 to Feb. 25, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Slight regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	496	723	1,060	1,020	1,400	10,800	4,770	1,660	554	418	1,160	2,080
2	617	586	1,060	1,450	1,350	8,700	4,110	1,660	554	617	881	1,540
3	760	470	839	5,600	1,300	7,550	4,550	1,360	525	470	586	1,420
4	586	525	686	7,000	1,650	6,730	3,690	1,200	470	443	554	1,660
5	496	470	554	6,000	1,900	10,200	3,100	1,260	496	394	686	1,310
6	470	554	586	4,700	2,100	9,000	12,500	1,540	443	418	1,110	1,110
7	554	525	968	4,500	1,900	6,730	19,200	1,420	394	418	2,570	839
8	525	496	1,280	5,500	1,700	5,290	11,100	1,360	496	586	1,540	652
9	496	554	6,180	7,000	1,500	4,840	7,270	1,310	1,010	443	1,060	617
10	443	800	7,270	15,100	1,400	6,510	8,700	1,200	1,010	394	800	686
11	394	554	5,230	10,500	1,300	9,690	8,120	1,110	800	443	652	617
12	496	668	4,110	7,000	1,250	17,400	7,850	800	686	418	760	525
13	760	1,950	3,690	5,470	1,200	13,500	6,210	1,420	1,660	443	617	586
14	839	3,400	5,710	5,710	1,600	8,180	5,470	1,420	1,660	443	554	723
15	617	2,570	8,120	5,470	4,700	6,940	4,550	1,420	1,310	418	443	617
16	496	1,790	8,700	4,770	6,200	8,080	3,690	1,360	881	394	586	554
17	496	1,540	7,550	4,550	5,800	37,200	3,490	1,200	800	394	496	554
18	443	1,420	5,470	3,900	5,400	82,800	2,920	1,060	652	349	418	470
19	443	1,420	4,550	5,000	5,000	39,100	2,570	1,110	554	328	349	443
20	586	1,310	3,290	5,230	4,200	17,400	2,240	1,420	496	394	686	443
21	586	1,180	2,570	3,690	3,500	14,700	2,080	1,200	586	394	800	443
22	443	1,360	1,700	3,500	3,000	12,100	2,080	1,010	470	271	525	443
23	496	1,110	2,000	2,600	2,500	13,900	1,930	881	470	372	760	349
24	496	1,260	2,300	1,700	2,400	14,700	1,790	760	443	554	723	418
25	554	1,110	1,800	2,400	8,000	22,400	1,660	723	418	617	470	418
26	586	839	1,300	2,000	30,000	17,000	1,660	723	372	881	1,710	418
27	723	968	1,000	1,800	35,000	13,500	1,540	723	372	893	2,080	443
28	617	1,060	880	1,600	25,500	12,500	1,660	686	470	5,750	1,540	443
29	470	923	820	1,500	14,500	8,600	1,790	686	470	3,700	8,230	418
30	525	1,010	800	1,550	6,340	1,660	617	418	1,950	10,200	418	
31	723	850	1,500	5,380	5,380	554			1,420	3,840		

Month		Maximum	Minimum	Mean	Per square mile	Run-off in inches
October		839	384	556	0.324	0.37
November		3,400	470	1,104	.644	.72
December		8,700	554	2,998	1.75	2.02
January		15,100	1,020	4,494	2.62	3.02
February		35,000	1,200	6,112	3.56	3.84
March		82,800	4,840	14,750	8.60	9.92
April		19,200	1,540	4,798	2.80	3.12
May		1,660	554	1,124	.655	.76
June		1,660	372	665	.388	.43
July		5,750	271	820	.478	.55
August		10,200	349	1,529	.892	1.05
September		2,080	349	722	.421	.47
The year		82,800	271	3,307	1.93	26.25

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	96	151	300	310	3,280	870	256	97	73	99	223
2	81	74	110	370	300	2,350	915	238	93	88	79	176
3	81	69	120	750	300	1,730	915	273	86	84	64	194
4	71	64	110	905	310	1,870	740	315	76	66	60	181
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MONONGAHELA RIVER BASIN

Big Piney Run near Salisburg, Pa.

Location.—Water-stage recorder, lat. $39^{\circ}43'32''$, long. $79^{\circ}2'57''$, one-eighth of a mile above Little Piney Run, a quarter of a mile north of Maryland-Pennsylvania State line, and 2½ miles southeast of Salisburg, Somerset County.

Drainage area.—24.5 square miles.

Records available.—June 1932 to September 1936.

Extremes.—Maximum discharge during year, about 4,100 second-feet Mar. 17 (gage height, 7.5 feet); minimum, 0.4 second-foot July 22, 23 (gage height, 1.05 feet) 1932-36: Maximum discharge, that of Mar. 17, 1936; minimum, 0.25 second-foot Sept. 13, 20-22, 1932.

Remarks.—Records excellent below 400 second-feet except those for periods of ice effect, Dec. 22-31, Jan. 24 to Feb. 28, which are poor and are based on records of nearby streams. Water supply for city of Frostburg diverted 3 miles above gage not included in records except in part of monthly table.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.2	5.3	8.7	12	18	206	64	15	2.2	3.1	1.8	2.8
2	4.4	4.2	7.7	13	18	174	59	14	1.9	2.0	1.4	2.8
3	3.2	4.2	7.7	27	17	136	53	28	1.8	1.6	1.2	3.8
4	3.1	4.0	6.8	34	17	130	44	22	1.7	1.4	1.2	3.4
5	2.9	3.8	8.0	30	17	194	42	21	1.7	1.7	6.8	2.6
6	3.6	3.1	7.1	26	14	183	254	19	1.6	1.7	6.6	2.0
7	4.8	4.0	6.6	35	15	157	219	17	1.6	1.3	4.4	1.8
8	5.2	6.6	16	38	11	131	160	15	2.8	1.2	2.8	1.7
9	3.2	5.0	32	70	11	146	136	13	2.0	1.0	2.2	1.6
10	2.6	4.0	28	132	10	208	114	11	3.9	.8	1.8	1.4
11	3.2	4.4	35	86	10	877	96	10	3.4	.6	1.7	1.4
12	11	5.3	30	65	9	569	83	10	3.7	.6	2.3	1.2
13	5.5	46	33	64	9	243	72	9.7	9.0	.5	2.0	1.6
14	3.6	29	73	63	13	179	59	14	7.1	.5	1.3	1.3
15	3.6	22	88	63	29	164	52	9.4	4.0	.5	1.7	1.3
16	2.3	19	120	68	41	183	43	8.0	1.9	.5	1.2	.9
17	2.6	20	99	58	39	2,060	37	7.4	1.6	.5	1.0	.8
18	2.3	21	72	59	38	1,100	32	7.4	4.7	.5	.9	.7
19	3.2	19	54	57	37	348	28	7.7	1.8	.4	1.8	.7
20	3.6	20	38	65	37	211	25	6.8	1.3	.4	3.4	.6
21	3.1	19	27	59	36	179	22	5.5	1.2	.4	3.6	.6
22	3.2	18	35	53	36	162	23	5.0	1.0	.4	3.4	.6
23	3.4	14	27	37	36	155	20	4.6	1.0	.5	6.8	.6
24	2.8	13	23	45	35	278	17	4.0	1.4	1.6	4.2	.6
25	2.8	11	20	42	65	411	15	4.4	1.6	1.6	3.6	.8
26	2.2	13	17	36	380	250	16	4.6	1.1	.8	4.8	.7
27	1.8	12	15	30	550	219	15	3.6	.9	12	5.3	.6
28	2.2	13	16	27	370	185	16	2.8	.9	39	3.8	.5
29	1.2	13	14	23	208	155	15	2.4	.9	5.5	4.8	.5
30	11	9.4	13	22	115	14	2.4	1.2	2.8	4.6	.5	
31	6.3		12	21	85		2.3	2.0	3.4			

Month	Observed			Corrected for diversion		
	Maximum	Minimum	Mean	Mean	Per square mile	Run-off in inches
	12	1.8	4.09	4.27	0.174	0.20
October	46	3.1	12.8	12.9	.527	.59
November	120	6.6	31.9	32.0	1.31	1.51
December	132	12	47.1	47.2	1.93	2.22
January	550	9	73.2	73.5	3.00	3.24
February	2,060	85	316	316	12.90	14.87
March	254	14	61.5	61.5	2.51	2.80
April	28	2.3	9.84	10.1	.412	.48
May	9.0	.9	2.36	2.72	.111	.12
June	39	.4	2.82	3.25	.133	.15
July	34	.9	4.08	4.53	.185	.21
August	3.8	.5	1.36	1.84	.075	.08
The year	2,060	.4	47.4	47.6	1.94	26.47

MONONGAHELA RIVER BASIN

Laurel Hill Creek at Ursina, Pa.

Location.—Chain gage, lat. $39^{\circ}48'55''$, long. $79^{\circ}19'40''$, at highway bridge at Ursina, Somerset County, 2 miles above mouth. Zero of gage is 1,329.06 feet above mean sea level.

Drainage area.—121 square miles.

Records available.—August to September 1913, October 1918 to September 1921, October 1931 to September 1936 in reports of U.S. Geological Survey; August 1913 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—20 years (1916-36), 275 second-feet.

Extremes.—Maximum discharge during year, 10,300 second-feet Mar. 17 (gage height, 10.28 feet, from floodmark) from rating curve extended on basis of slope-area determination; minimum, 3.2 second-feet July 21-23 (gage height, 1.58 feet).

1913-36: Maximum discharge, that of Mar. 17, 1936; no flow Aug. 22, 1917, Feb. 15, 1919; minimum daily discharge observed, 1 second-foot Aug. 22, Sept. 1, 1917.

Remarks.—Records fair except those for periods of ice effect, Dec. 2-8, Dec. 22 to Jan. 9, Jan. 24 to Feb. 25, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	25	77	130	120	975	335	83	45	39	25	325
2	41	24	70	170	115	740	335	90	37	32	22	260
3	35	24	63	280	115	610	320	86	34	24	18	283
4	24	21	60	220	120	578	325	90	34	20	17	197
5	21	21	58	200	115	1,120	278	77	25	24	43	136
6	21	27	70	190	110	905	2,060	69	28	18	238	117
7	22	29	105	250	105	675	1,220	55	27	14	201	97
8	20	34	300	400	100	543	740	61	124	8.2	147	77
9	21	37	1,000	95	637	838	55	100	10	53	58	
10	20	29	1,040	92	1,100	740	53	51	6.8	39	53	
11	18	28	515	642	88	1,830	675	55	58	11	35	51
12	53	51	355	805	85							

MONONGAHELA RIVER BASIN

Turtle Creek at Trafford, Pa.

Location. - Chain gage, lat. $40^{\circ}23'20''$, long. $79^{\circ}45'5''$, at highway bridge at Blackburn railroad station half a mile northeast of Trafford, Westmoreland County, 1½ miles above mouth of Brush Creek, and 7 miles above confluence with Monongahela River. Zero of gage is 780.27 feet above mean sea level.

Drainage area. - 54.8 square miles.

Records available. - October 1920 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; July 1914 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge. - 16 years (1920-36), 78.3 second-feet.

Extremes. - Maximum discharge during year, 3,700 second-feet Mar. 17 (gage height, 7.85 feet) from rating curve extended above 500 second-feet; minimum, 0.6 second-foot at times in July (gage height, 0.07 foot).

1914-36: Maximum discharge, 4,420 second-feet Mar. 15, 1933 (gage height, 8.5 feet, from graph based on gage readings) from rating curve extended above 500 second-feet; minimum, 0.1 second-foot Oct. 6, 7, 1922.

Remarks. - Records fair except those above 700 second-feet and those for periods of ice effect, which are poor. Discharge for periods of ice effect, Dec. 1-7, Dec. 21 to Jan. 3, Jan. 20 to Feb. 25, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	4.8	13	33	86	98	97	24	5.4	3.2	0.7	5.8
2	12	6.4	12	41	85	89	90	23	5.1	2.3	.7	4.5
3	7.4	4.1	11	500	100	226	76	23	5.4	2.1	.7	6.1
4	4.3	4.1	10	198	120	172	63	24	4.8	1.8	.8	4.0
5	4.1	5.3	11	226	110	159	60	22	5.1	2.3	83	2.7
6	3.6	15	13	136	102	119	573	20	3.7	1.9	42	1.9
7	2.9	9.0	18	198	97	96	224	20	3.4	1.6	11	1.8
8	3.4	20	112	136	93	76	146	16	6.4	1.4	5.6	1.6
9	3.8	13	220	570	93	76	124	14	3.7	1.4	4.2	1.4
10	4.1	11	115	421	91	68	146	13	3.4	1.4	3.4	1.2
11	3.8	11	107	211	89	96	146	13	18	4.8	3.2	1.2
12	6.9	70	84	184	86	216	118	13	11	2.5	2.5	1.2
13	4.3	502	109	184	100	161	108	16	18	1.8	1.9	17
14	3.6	94	360	136	160	126	92	14	8.4	1.4	7.2	-
15	6.9	51	354	113	150	130	85	12	6.1	1.4	1.9	3.4
16	4.8	40	249	91	145	655	72	12	4.5	1.2	2.1	2.3
17	3.8	31	148	74	137	2,490	63	8.4	4.0	.9	1.8	-
18	5.3	24	111	172	128	1,350	55	9.6	10	.9	1.4	1.3
19	5.3	22	89	148	120	939	48	19	6.4	.8	1.4	1.2
20	4.1	25	72	135	116	420	46	13	4.5	.7	3.0	.9
21	4.1	20	73	125	113	355	46	8.4	3.7	.6	3.0	.9
22	13	17	68	118	111	384	46	8.8	2.5	.6	2.5	1.0
23	8.5	12	61	110	115	450	40	8.0	2.3	9.5	1.9	.8
24	7.4	16	57	104	150	473	37	6.7	2.5	38	1.8	1.2
25	6.4	18	52	100	1,000	310	35	14	2.7	3.9	1.9	1.3
26	5.9	13	47	96	811	237	32	8.4	2.1	3.0	2.5	1.0
27	4.8	8.5	42	93	513	393	32	10	2.3	10	6.0	1.0
28	4.8	19	39	91	219	213	34	7.4	2.3	4.0	4.1	.7
29	5.9	17	36	89	148	161	29	8.0	1.8	2.3	204	318
30	6.4	16	35	87	133	27	7.4	4.0	1.4	18	76	-
31	6.4	33	87	112			6.1	1.0	9.5			-
Month				Maximum	Minimum	Mean	Per square mile	Run-off in inches				
October				13	2.9	5.77	0.105	0.12				
November				502	4.1	37.3	.681	.76				
December				360	10	89.1	1.63	1.88				
January				570	33	162	2.96	3.41				
February				1,000	85	186	3.39	3.66				
March				2,490	68	354	6.46	7.45				
April				573	27	93.0	1.70	1.90				
May				24	6.1	13.6	.248	.29				
June				18	1.8	5.45	.099	.11				
July				38	.6	3.55	.063	.07				
August				204	.7	13.8	.252	.29				
September				318	.7	15.7	.286	.32				
The year				2,490	.6	81.5	1.49	20.26				

BEAVER RIVER BASIN

Beaver River at Wampum, Pa.

Location. - Staff gage, lat. $40^{\circ}53'15''$, long. $80^{\circ}20'5''$, at highway bridge at Wampum, Lawrence County. Zero of gage is 736.24 feet above mean sea level.

Drainage area. - 2,235 square miles.

Records available. - June to September 1914, August 1932 to September 1936.

Extremes. - Maximum discharge during year, 42,500 second-feet Mar. 25 (gage height, 19.22 feet, from floodmark) from rating curve extended above 14,000 second-feet; minimum, 241 second-feet Oct. 7 (gage height, 2.20 feet).

1914-32: Maximum discharge, that of Mar. 25, 1936; minimum, 74 second-feet July 30, 1933 (gage height, 1.70 feet); minimum daily discharge, 97 second-feet July 22, Aug. 23, 1933.

Maximum stage known, about 29.9 feet Mar. 26, 1913 (discharge not determined).

Remarks. - Records good except those for extremely high stages and for periods of ice effect, which are fair. Discharge for periods of ice effect, Jan. 23 to Feb. 4, Feb. 19-23, determined from gage heights, weather records, and by comparison with records for stations upstream. Discharge for high stages determined from graphs based on twice-daily gage readings. Regulation from storage in Milton and Pymatuning Reservoirs and from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	367	357	830	785	440	5,830	4,750	2,720	454	486	325	1,240
2	406	336	740	785	425	4,410	4,920	2,450	454	454	297	1,025
3	377	326	615	1,560	440	3,760	4,750	2,720	425	1,000	289	834
4	367	326	538	2,860	500	3,760	4,080	2,190	386	976	293	706
5	357	362	435	4,080	785	4,580	3,760	1,820	386	666	396	554
6	308	406	435	3,600	830	3,450	5,460	1,580	396	486	454	425
7	245	377										

BEAVER RIVER BASIN

Pymatuning Reservoir at Pymatuning Dam, Pa.

Location. - Water-stage recorder, lat. $41^{\circ}30'0''$, long. $80^{\circ}27'35''$, in gate house at Pymatuning Dam, Crawford County, 1 3/4 miles northwest of Jamestown. Zero of gage is at mean sea level.

Drainage area. - 158 square miles.

Records available. - October 1933 to September 1936.

Extremes. - Maximum water-surface elevation during year, 1,008.93 feet Mar. 31; minimum, 1,002.73 feet Nov. 5.

1934-36: Maximum water-surface elevation, that of Mar. 31, 1936; minimum, 975.70 feet Oct. 15, 16, 19, 1933.

Remarks. - Records excellent. Reservoir used to regulate flow in Shenango River. Elevation of spillway is 1,008.0 feet. Total capacity of reservoir is 8,640,000,000 cubic feet.

BEAVER RIVER BASIN

Shenango River at Pymatuning Dam, Pa.

Location. - Water-stage recorder, lat. $41^{\circ}29'55''$, long. $80^{\circ}27'30''$, 500 feet below mouth of Sugar Run, 550 feet below Pymatuning Dam, Crawford County, and 1 1/2 miles northwest of Jamestown. Zero of gage is 970.00 feet above mean sea level.

Drainage area. - 167 square miles.

Records available. - June 1934 to September 1936.

Extremes. - Maximum discharge during year, 788 second-feet Apr. 1 (gage height, 6.80 feet); minimum, 2.0 second-feet Oct. 4, Feb. 11, 12 (gage height, 3.42 feet).

1934-36: Maximum discharge, that of Apr. 1, 1936; minimum, 0.4 second-foot July 2, 3, 1934 (gage height, 3.27 feet).

Remarks. - Records excellent. Regulation from storage in Pymatuning Reservoir.

Corrections for storage not included except in part of monthly table. Figures with minus sign indicate amount by which evaporation and seepage from reservoir exceeded natural flow.

Elevation, in feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.35	3.05	3.01	3.88	4.79	6.00	8.74	7.73	7.59	7.03	6.31	5.87
2	3.27	3.04	3.04	3.91	4.81	6.04	8.67	7.76	7.55	6.97	6.29	5.83
3	3.23	2.97	3.00	3.94	4.82	6.07	8.70	7.89	7.64	7.00	6.24	5.85
4	3.26	2.90	3.09	4.00	4.85	6.13	8.57	7.87	7.59	6.96	6.28	5.83
5	3.27	2.92	3.02	4.08	4.86	6.19	8.49	7.85	7.56	6.98	6.30	5.76
6	3.29	2.96	3.03	4.13	4.86	6.23	8.59	7.80	7.50	6.95	6.33	5.70
7	3.24	2.96	3.01	4.15	4.88	6.24	8.55	7.79	7.48	6.91	6.31	5.68
8	3.22	2.96	3.04	4.17	4.88	6.26	8.49	7.78	7.50	6.96	6.26	5.69
9	3.18	2.94	3.14	4.23	4.87	6.40	8.44	7.77	7.47	6.84	6.22	5.68
10	3.15	2.90	3.18	4.37	4.88	6.48	8.44	7.75	7.44	6.83	6.22	5.66
11	3.21	2.98	3.25	4.42	4.87	6.57	8.39	7.73	7.48	6.78	6.20	5.60
12	3.18	3.06	3.23	4.46	4.88	6.72	8.40	7.72	7.46	6.78	6.14	5.59
13	3.14	3.10	3.28	4.50	4.90	6.79	8.38	7.84	7.42	6.75	6.11	5.57
14	3.16	3.02	3.32	4.55	4.93	6.83	8.27	7.89	7.38	6.74	6.06	5.51
15	3.18	3.02	3.35	4.58	4.96	6.89	8.26	7.82	7.36	6.72	6.03	5.51
16	3.09	3.02	3.54	4.61	4.97	7.00	8.26	7.84	7.33	6.64	6.05	5.53
17	3.08	3.04	3.56	4.63	4.98	7.15	8.17	7.79	7.25	6.58	6.09	5.58
18	3.11	3.04	3.59	4.67	5.00	7.23	8.09	7.81	7.25	6.53	5.99	5.52
19	3.07	2.94	3.62	4.70	5.00	7.24	8.02	7.90	7.27	6.50	5.96	5.46
20	3.09	2.98	3.73	4.72	5.00	7.27	7.92	7.07	7.26	6.46	6.04	5.40
21	2.99	2.94	3.69	4.72	5.01	7.32	7.97	7.86	7.26	6.41	6.00	5.40
22	3.09	3.02	3.71	4.74	5.01	7.35	7.89	7.81	7.20	6.32	5.97	5.36
23	3.16	3.06	3.72	4.75	5.01	7.52	7.82	7.81	7.11	6.25	5.97	5.29
24	3.12	3.00	3.74	4.77	5.02	7.96	7.80	7.82	7.10	6.41	5.98	5.37
25	3.06	2.93	3.75	4.77	5.16	8.32	7.72	7.84	7.05	6.36	5.96	5.33
26	3.05	2.95	3.78	4.77	5.41	8.46	7.74	7.78	7.02	6.34	5.97	5.23
27	3.03	2.90	3.81	4.77	5.81	8.59	7.62	7.84	7.04	6.43	5.94	5.18
28	3.02	2.97	3.83	4.79	5.91	8.68	7.64	7.81	7.05	6.42	5.87	5.29
29	3.01	2.96	3.85	4.78	5.97	8.65	7.72	7.74	6.94	6.48	5.94	5.24
30	3.03	2.96	3.86	4.79	5.95	8.65	7.74	7.74	7.04	6.42	5.92	5.14
31	3.03	3.87	4.78		8.78	7.67			6.36	5.92		

Note. - Add 1,000.00 feet to obtain elevations above mean sea level.

Daily and monthly discharge, in second-feet, 1935-36

Month	Observed			(Mean)	Storage	Corrected for storage		
	Maximum	Minimum	Mean			Mean	Per square mile	Run-off in inches
October.....	86	3.1	58.4	-60.9	-2.5	-0.15	-0.02	
November.....	67	2.4	25.4	0	25.4	.152	.18	
December.....	56	3.3	14.9	+185	200	1.20	1.38	
January.....	49	3.0	11.6	+190	202	1.21	1.40	
February.....	186	2.2	19.3	+280	299	1.79	1.93	
March.....	728	6.1	129	+649	778	4.66	5.37	
April.....	723	167	538	-270	268	1.60	1.78	
May.....	167	2.5	76.3	0	76.3	.457	.53	
June.....	146	71	102	-167	- 65.0	- .389	- .43	
July.....	216	60	124	-136	- 12.0	- .072	- .08	
August.....	158	62	120	-111	9.0	.054	.06	
September.....	268	64	134	-181	- 47.0	- .281	- .31	
The year.....	728	2.2	112	+ 32.1	144	.862	11.79	

BEAVER RIVER BASIN

Shenango River at Sharon, Pa.

Location.—Water-stage recorder, lat. $41^{\circ}13'55''$, long. $80^{\circ}30'35''$, at Chestnut Street Bridge, at Sharon, Mercer County, 500 feet above mouth of Pine Run. Zero of gage is 840.00 feet above mean sea level.

Drainage area.—608 square miles.

Records available.—October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; August 1909 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—26 years (1910-36), 683 second-feet.

Extremes.—Maximum discharge during year, 11,900 second-feet Mar. 25 (gage height, 13.40 feet, from floodmark in gage well); minimum, 40 second-feet Oct. 6 (gage height, 2.36 feet).

1909-36: Maximum discharge, 25,200 second-feet Mar. 26, 1913 (gage height, 18.1 feet) from rating curve extended above 14,000 second-feet; minimum, 6.5 second-feet Sept. 22, 1932 (gage height, 1.63 feet).

Remarks.—Records fair. Discharge for periods of ice effect, Jan. 21 to Feb. 4, Feb. 20-27, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations at Pymatuning Dam and at Wampum. Regulation from storage in Pymatuning Reservoir and from power operations upstream. Corrections for effect of storage not included in records except in part of monthly table. Figures with minus sign indicate amount by which evaporation and seepage from reservoir exceeded natural flow.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	91	174	174	90	1,620	1,770	1,050	134	236	154	428
2	108	84	126	170	85	1,140	1,730	800	123	211	151	328
3	108	86	111	462	85	860	1,660	640	120	388	155	274
4	82	76	89	1,080	90	860	1,560	595	154	288	161	236
5	56	86	74	1,420	115	992	1,310	585	164	174	151	204
6	43	93	106	1,120	148	857	2,130	555	161	167	194	180
7	78	97	131	800	142	590	2,210	444	128	134	167	174
8	95	104	328	680	126	424	1,700	380	126	120	111	164
9	93	104	1,280	1,340	99	1,980	1,700	348	218	145	111	154
10	84	86	1,150	2,460	97	3,000	2,290	324	296	145	154	151
11	72	68	890	1,730	97	2,370	2,130	306	190	145	148	145
12	68	88	722	1,240	91	2,730	2,050	296	194	137	140	148
13	86	205	570	1,210	88	2,050	2,050	302	158	134	140	167
14	106	246	635	1,210	116	1,340	1,660	396	151	128	131	158
15	106	170	1,310	890	194	1,480	1,450	452	198	128	134	208
16	99	126	2,460	740	218	1,520	1,210	388	184	170	151	181
17	72	93	1,750	550	194	1,180	1,080	232	170	222	148	296
18	62	86	1,240	460	170	800	952	167	164	222	137	229
19	89	86	1,050	460	148	758	920	246	131	187	145	198
20	102	73	830	299	128	800	890	257	142	128	246	170
21	104	80	444	350	120	860	920	204	126	128	194	111
22	126	111	336	270	115	860	1,080	142	108	137	260	119
23	137	102	388	200	110	1,920	1,050	111	106	146	324	292
24	109	97	340	170	142	6,500	782	102	120	194	257	332
25	72	78	292	160	800	10,800	615	99	145	184	254	292
26	58	58	243	150	3,000	8,680	570	84	145	164	452	198
27	102	66	218	140	5,000	4,270	535	167	145	170	392	180
28	126	175	218	130	4,720	3,000	460	184	142	340	334	177
29	126	187	120	2,130	1,080	1,210	170	145	226	625	830	174
30	103	250	190	110	1,890	1,210	151	194	151	151	570	
31	89	177	100	1,930	148	1,930	1,930	123	123	123	570	

Month	Observed			Storage	Corrected for storage		
	Maximum	Minimum	Mean		Mean	Per square mile	Run-off in inches
October	137	43	91.3	-60.9	30.4	0.050	0.06
November	257	58	114	0	114	.188	.21
December	2,460	74	582	+185	767	1.26	1.45
January	2,460	100	658	+190	848	1.39	1.60
February	5,000	85	662	+280	942	1.55	1.67
March	10,800	424	2,264	+649	2,913	4.79	5.52
April	2,290	460	1,358	-270	1,088	1.79	2.00
May	1,050	84	333	0	333	.548	.63
June	296	106	156	-187	-11	-.018	-.02
July	388	120	180	-136	44	.072	.08
August	830	111	243	-111	132	.217	.25
September	428	111	208	-181	27	.044	.05
The year	10,800	43	572	+ 32.1	604	.993	13.52

BEAVER RIVER BASIN

Sugar Run at Pymatuning Dam, Pa.

Location.—Staff gage, lat. $41^{\circ}29'50''$, long. $80^{\circ}27'55''$, at highway bridge at Pymatuning Dam, Crawford County, a quarter of a mile above mouth, and 1 3/4 miles northwest of Jamestown. Zero of gage is 984.59 feet above mean sea level.

Drainage area.—9.34 square miles.

Records available.—March 1934 to September 1936.

Extremes.—Maximum discharge during year, 678 second-feet Mar. 24 (gage height, 4.0 feet, from graph based on gage readings) from rating curve extended above 200 second-feet; no flow at times during January and July.

1934-36: Maximum discharge, that of Mar. 24, 1936; no flow at times during each year.

Remarks.—Records fair. Discharge for periods of ice effect, Dec. 22 to Jan. 4, Jan. 24-25, Feb. 4 to Mar. 5, determined from gage heights, weather records, and by comparison with records for station on Shenango River at Pymatuning Dam. Discharge for high stages determined from graphs based on twice-daily gage readings.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.5	1.2	0.9	1.2	5.9	12	8.2	0.5	0.8	0.2	1.0
2	.4	.5	1.1	2.0	.2	4.4	17	6.2	.4	.5	.2	.8
3	.4	.4	1.1	24	.3	5.6	9.9	7.0	.4	1.0	.1	.5
4	.4	.4	.8	24	1.0	17	7.6	5.5	.4	1.1	.2	.5
5	.4	.5	.8	37	3.0	13	7.3	3.0	.4	.8	.2	.4
6	.4	1.2	.8	11	2.5	6.2	64	2.3	.4	.5	.8	.4
7	.3	.8	1.2	6.7	2.0	2.8	17	1.8	.3	.4	.5	.2
8												

BEAVER RIVER BASIN

Little Shenango River at Greenville, Pa.

Location.- Water-stage recorder, lat. $41^{\circ}25'15''$, long. $80^{\circ}22'35''$, 1,500 feet below Williamson Crossing Bridge, 1 mile northeast of Greenville, Mercer County, and 2 miles above mouth. Zero of gage is 953.46 feet above mean sea level.

Drainage area.- 104 square miles.

Records available.- November 1919 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; January 1914 to August 1923, November 1925 to September 1936 in reports of Pennsylvania Department of Forests and Waters. Records prior to June 1934 obtained at Columbia Avenue Bridge 1 mile downstream.

Average discharge.- 16 years (1914-18, 1920-22, 1926-36), 134 second-feet.

Extremes.- Maximum discharge during year, 4,440 second-feet Mar. 25 (gage height 10.81 feet) from rating curve extended above 2,200 second-feet; minimum, 5.5 second-feet Oct. 4 (gage height, 0.71 foot); minimum daily discharge, 7.4 second-feet Oct. 11, July 21.

1919-23, 1925-36: Maximum discharge, that of Mar. 25, 1936; minimum, 2.0 second-feet Aug. 21, 1923.

Remarks.- Records good except those for extremely high stages and for periods of recorder failure, which are fair, and those for periods of ice effect, which are poor. Discharge for periods of ice effect, Dec. 2-7, Dec. 22 to Jan. 4, Jan. 20 to Feb. 28, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for periods of recorder failure, Mar. 28 to Apr. 1, Aug. 9-12, 22-24, 26, 27, Sept. 2, determined by comparison with records for stations mentioned above. Some regulation at low stages from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	12	27	47	24	183	210	187	23	38	18	40
2	9.8	11	22	52	23	141	239	128	22	13	34	
3	8.7	10	20	200	22	134	219	115	19	38	11	30
4	8.0	12	18	400	25	200	160	102	18	28	13	22
5	12	12	18	447	43	281	141	80	18	25	17	20
6	8.7	17	17	231	45	157	472	72	17	22	31	16
7	8.0	18	19	135	40	109	408	59	17	18	38	14
8	8.7	17	55	103	33	100	225	51	30	15	24	14
9	8.3	18	268	309	28	988	248	45	257	12	35	13
10	8.0	15	176	698	25	790	488	42	54	16	25	12
11	7.4	18	120	337	22	509	348	38	59	13	20	11
12	9.8	29	103	203	20	720	376	38	43	11	15	11
13	8.7	35	85	238	22	400	338	59	32	10	11	13
14	8.3	39	107	225	26	221	200	78	25	9.4	11	12
15	7.7	27	274	160	60	362	157	52	23	8.7	12	12
16	9.8	26	646	135	54	348	129	42	21	8.3	15	12
17	8.7	20	335	96	48	197	112	37	18	11	13	36
18	7.7	18	187	102	45	105	103	35	21	9.0	13	44
19	8.3	19	144	89	40	167	100	79	32	8.3	14	25
20	9.4	21	108	49	36	219	94	75	22	8.0	45	17
21	8.3	18	80	51	34	233	98	46	16	7.4	25	12
22	9.4	19	70	46	33	220	149	37	14	7.7	37	14
23	24	16	65	42	32	472	126	32	14	8.6	29	12
24	25	13	62	38	90	2,460	98	30	14	24	25	17
25	21	12	59	35	800	3,100	79	28	13	22	28	28
26	14	13	56	33	1,300	1,380	70	26	12	15	70	23
27	12	14	54	31	1,700	840	61	34	12	146	40	16
28	11	22	52	29	700	666	72	34	12	108	31	16
29	11	42	50	27	309	450	382	27	12	43	150	16
30	16	34	48	26	350	256	26	50	27	114	16	
31	14	47	25	250			24	23	342			

Month			Maximum	Minimum	Mean	Per square mile	Run-off in inches
October			25	7.4	11.0	0.106	0.12
November			42	10	19.9	.191	.21
December			646	17	109	1.05	1.21
January			698	25	150	1.44	1.66
February			1,700	20	196	1.88	2.03
March			3,100	100	540	5.19	5.98
April			488	61	205	1.97	2.20
May			187	24	56.7	.545	.63
June			257	12	31.3	.301	.34
July			146	7.4	24.7	.238	.27
August			342	11	41.4	.398	.46
September			44	11	19.3	.186	.21
The year			3,100	7.4	117	1.12	15.32

BEAVER RIVER BASIN

Pymatuning Creek near Orangeville, Pa.

Location.- Water-stage recorder, lat. $41^{\circ}18'40''$, long. $80^{\circ}28'40''$, 2 miles above mouth, 3 miles southeast of Orangeville, Mercer County, and 3 miles north of Sharpsville. Zero of gage is 872.94 feet above mean sea level.

Drainage area.- 169 square miles.

Records available.- October 1918 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; January 1914 to August 1923, November 1925 to September 1936 in reports of Pennsylvania Department of Forests and Waters. Records prior to June 1934 obtained at Columbia Avenue Bridge 1 mile downstream.

Average discharge.- 18 years (1914-22, 1926-36), 202 second-feet.

Extremes.- Maximum discharge during year, 3,250 second-feet Mar. 25 (gage height 10.68 feet) from rating curve extended above 2,200 second-feet; minimum, 2.0 second-feet July 21, 22 (gage height, 1.09 feet).

1914-23, 1925-36: Maximum discharge, that of Mar. 25, 1936; minimum, 0.5 second-foot Sept. 25, 1933.

Maximum stage known, about 15.8 feet, former site and datum, Mar. 26, 1913 (probably affected by backwater from Shenango River, discharge not determined).

Remarks.- Records good except those for extremely high stages and for periods of ice effect, which are poor. Discharge for periods of ice effect, Dec. 4-7, 23, 24, Jan. 20 to Feb. 28, determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Some regulation from operation of mills upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.6	13	53	85	39	1,340	392	320	12	15	15	162
2	9.0	12	44	87	36	920	423	214	10	21	9.4	100
3	9.0	12	36	211	34	645	434	140	10	100	6.4	71
4	9.3	12	32	384	40	426	392	160	8.6	82	6.6	51
5	8.6	13	28	514	70	335	258	192	8.2	60	6.4	33
6	7.9	16	26	489	70	272	379	177	7.9	36	22	21
7	7.9	16	26	489	58	236	445	104	7.9	20	12	15
8	7.9	21	80	456	45	177	489	70	8.2	13	12	12
9	7.6	20	313	637	40	600	495	53	9.0			

BEAVER RIVER BASIN

Connoquenessing Creek at Hazen, Pa.

Location.—Chain gage, lat. $40^{\circ}49'0''$, long. $80^{\circ}14'35''$, at highway bridge at Hazen, Beaver County, half a mile above mouth of Brush Creek. Zero of gage is 852.31 feet above mean sea level.

Drainage area.—356 square miles.

Records available.—October 1919 to September 1921, October 1931 to September 1936 in reports of U. S. Geological Survey; June 1915 to September 1936 in reports of Pennsylvania Department of Forests and Waters.

Average discharge.—17 years (1919-36), 478 second-feet.

Extremes.—Maximum discharge during year, 9,560 second-feet Mar. 17 (gage height, 12.45 feet, from floodmarks) from rating curve extended above 4,000 second-feet; minimum, 6.0 second-feet July 21-23 (gage height, 0.82 foot).

1915-36: Maximum gage height, 16.66 feet June 29, 1924 (discharge not determined); minimum discharge, that of July 21-23, 1926.

Remarks.—Records fair except those for periods of ice effect, Dec. 5-7, Dec. 21 to Jan. 7, Jan. 21 to Feb. 26, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Some regulation from operation of mills upstream.

BEAVER RIVER BASIN

Slippery Rock Creek at Wurtemburg, Pa.

Location.—Chain gage, lat. $40^{\circ}51'40''$, long. $80^{\circ}14'35''$, at highway bridge at Wurtemburg, Lawrence County, 1 mile above mouth. Zero of gage is 812.48 feet above mean sea level.

Drainage area.—406 square miles.

Records available.—October 1918 to September 1920, October 1931 to September 1936 in reports of U. S. Geological Survey; January 1912 to September 1936 in reports of Pennsylvania Department of Forests and Waters. Records prior to October 1922 obtained at a site half a mile upstream.

Average discharge.—23 years (1912-32), 545 second-feet.

Extremes.—Maximum discharge during year, 7,100 second-feet Mar. 25 (gage height, 9.04 feet, from floodmarks) from rating curve extended above 3,000 second-feet; minimum, 25 second-feet July 23, Aug. 3 (gage height, 2.18 feet).

1912-36: Maximum gage height (estimated), 11.8 feet Dec. 14, 1927 (discharge not determined); minimum discharge, 11 second-feet Sept. 8, 1925;

minimum daily discharge, 16 second-feet Sept. 8, 1925.

Remarks.—Records fair except those for periods of ice effect, Dec. 21 to Jan. 4, Jan. 21 to Feb. 25, which are poor and were determined from gage heights, weather records, one discharge measurement, and by comparison with records for stations in adjacent drainage areas. Discharge for high stages determined from graphs based on twice-daily gage readings. Regulation from power operations upstream.

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.				
1	68	49	193	360	290	1,160	880	152	83	45	11	37				
2	132	48	181	380	280	950	2,480	154	75	43	11	29				
3	120	44	159	470	280	1,180	1,730	398	62	31	10	24				
4	107	45	162	700	320	1,510	1,300	270	54	26	9.5	23				
5	80	46	155	1,150	300	1,580	1,090	212	46	23	13	20				
6	66	109	165	950	280	1,510	1,440	187	43	20	28	16				
7	55	113	230	820	230	1,060	1,230	168	41	16	68	11				
8	57	105	532	845	200	856	1,090	152	38	14	40	10				
9	53	103	1,900	1,690	180	756	950	112	62	13	27	10				
10	53	109	1,580	2,770	170	716	915	124	103	13	19	9.0				
11	50	107	1,370	1,890	170	996	845	113	126	13	12	8.5				
12	48	126	1,370	1,370	165	1,650	810	107	170	13	11	9.0				
13	49	574	1,370	1,300	250	1,340	740	128	126	12	11	98				
14	48	845	1,440	1,230	350	1,120	600	162	94	13	10	117				
15	45	565	2,210	1,020	550	1,290	600	149	57	19	9.0	43				
16	49	371	2,930	880	450	2,740	530	132	45	11	10	25				
17	52	265	2,050	775	320	7,570	496	105	41	13	10	19				
18	48	226	1,440	670	290	8,000	432	111	46	15	8.0	16				
19	48	184	1,020	740	260	3,860	348	394	57	11	8.0	17				
20	57	173	845	530	250	2,780	296	306	62	8.5	69	14				
21	54	162	625	580	240	3,640	287	200	43	6.5	55	10				
22	86	147	480	510	230	3,020	311	157	33	6.5	34	9.5				
23	105	120	410	470	240	2,930	257	135	28	6.5	27	9.0				
24	87	101	370	450	400	4,160	226	135	25	24	21	10				
25	72	96	350	400	1,000	3,920	196	178	23	98	26	11				
26	61	92	340	370	3,000	2,310	181	144	22	43	61	11				
27	55	103	335	350	6,040	2,010	157	144	20	23	43	14				
28	54	187	330	350	2,700	1,900	162	135	20	17	62	14				
29	53	257	330	320	1,580	1,680	170	107	19	14	126	74				
30	53	196	335	310	1,340	170	100	22	13	88	463					
31	53	340	300	1,150			87	13	55							
Month				Maximum	Minimum	Mean	Per square mile	Run-off in inches								
The year				8,000	6.5	493	1.38	18.86								

Daily and monthly discharge, in second-feet, 1935-36

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	81	283	385	300	1,620	940	270	136	92	44	99
2	104	81	240	450	300	1,220	1,350	429	114	97	41	72
3	114	81	216	700	290	1,020	1,530	1,440	109	122	30	72
4	109	85	166	1,000	300	1,100	1,100	1,100	95	184	36	65
5	85	95	200	1,440	370	1,820	902	650	97	112	38	57
6	67	122	412	1,260	330	1,530	1,180	512	95	78	65	52
7	59	157	755	980	310	1,060	1,260	366	92	65	98	48
8	59	114	828	790	290	782	902	313	109	65	80	34
9	57	95	2,130	1,440	250	843	790	283	87	57	36	31
10	63	133	1,720	2,810	240	1,150	828	216	90	54	48	46
11	63	160	1,260	2,020	230	1,390	865	190	90	48	34	39
12	72	239	902	1,440	230	2,160	865	200	99	39	39	36
13	67	1,060	828	1,620	270	1,720	755	204	99	36	36	65
14	83	940	1,020	1,350	350	1,280	615	288	83	34	33	54
15	139	580	1,720	1,020	450	1,500	512	248	72	33	31	46
16	131	344	2,460	720	400	2,130						

Miscellaneous Discharge Measurements for the year ending Sept. 30, 1936.

Stream	Location	Date	Gage height	Discharge	Drainage area	Per square mile
Delaware River Basin						
Monocacy Creek...	New Street Bridge at Bethlehem.	Deo. 12	1.30	49.6	2.62	
do.	do...	Mar. 12	1,040	49.6	21.0	
do.	do...	Mar. 13	104	49.6	8.06	
do.	do...	May 14	62.9	49.6	2.10	
do.	do...	July 8	120	49.6	1.27	
do.	do...	Sept. 3	120	49.6	2.42	
Susquehanna River Basin						
West Branch of Susquehanna River...	Near Westport.	Mar. 15	213,000	2,678	80	
do.	At Watsontown.	Mar. 15	265,000	6,596	43	
do.	At Rockview Prison near Pleasant Gap.	Mar. 17	1,010	2.4	421	
do.	Warrior Ridge Dam near Petersburg.	Mar. 18	80,000	.....	.....
do.	Pottsgrove Dam near Altoona.	Mar. 17	777	2.8	278	
do.	Bellwood Dam near Bellwood.	Mar. 17	3,350	18.2	164	
do.	Dam No. 2 near Tyrone.	Mar. 17	1,000	6.0	167	
do.	Dam No. 1 near Tyrone.	Mar. 18	913	6.1	150	
do.	At Juniata Crossing.	Mar. 18	67,000	549	122	
Raystown Branch of Juniata River...	Raystown Dam at Hawns Bridge.	Nov. 21	2.32	949.	91	
do.	At highway bridge three-fourths mile southwest of Pine Grove.	Jan. 17	2.38	104	34.3	
do.	do...	Mar. 10	4.15	112	34.3	
do.	do...	May 12	1.41	509	34.3	
do.	do...	July 10	1.16	15.6	34.3	
do.	do...	Sept. 4	1.13	5.8	34.3	
do.	do...	do...	3.7	3.7	34.3	
Upper Little Swatara Creek.	Mar. 17-18	5,650	b	28.4	199	
do.	Mar. 17-18	30,500	a	454	67	
do.	Mar. 17-18	58,600	ac	451	130	
do.	Mar. 18	91,000	o	748	222	
do.	Mar. 17-18	22,400	o	160	140	
do.	Mar. 17-18	28,800	a	187	154	
do.	Mar. 17	5,580	p	24.5	228	
do.	Mar. 17	824	b	6.7	123	
do.	Mar. 17	521	b	6.3	83	
do.	Mar. 17-18	659	b	10.5	63	
do.	Mar. 17-18	6,000	b	65.2	92	
do.	Mar. 17-18	2,660	b	11.7	227	
do.	Mar. 17-18	618	b	5.2	119	
do.	Aug. 11	1.03	1,065	1.065	.44	
do.	Mar. 17	537	1,065	1,065	.50	
do.	Mar. 17	32,000	a	341	94	
do.	Mar. 17	6,820	b	110	52	
do.	Oct. 23	1.00	45.5	264	17	
do.	Dec. 15	3.28	1,010	264	3.83	
do.	Feb. 15	3.76	1,440	264	5.45	
do.	Apr. 27	1.68	1,195	264	74	
do.	Apr. 28	1.70	209	264	79	
do.	June 5	1.07	45.2	264	17	
do.	Aug. 14	.92	25.8	264	10	
Ohio River Basin						
Big Mill Creek.	Mar. 17-18	5,650	b	28.4	199	
Redbank Creek...	Mar. 17-18	30,500	a	454	67	
Stony Creek...	Mar. 17-18	58,600	ac	451	130	
Canaehaugh River...	Mar. 18	91,000	o	748	222	
Little Canaehaugh River...	Mar. 17-18	22,400	o	160	140	
do.	Mar. 17-18	28,800	a	187	154	
North Branch of Little Canaehaugh River.	Mar. 17	5,580	p	24.5	228	
South Fork of Little Canaehaugh River...	Mar. 17	824	b	6.7	123	
do.	Mar. 17	521	b	6.3	83	
do.	Mar. 17-18	659	b	10.5	63	
do.	Mar. 17-18	6,000	b	65.2	92	
do.	Mar. 17-18	2,660	b	11.7	227	
do.	Mar. 17-18	618	b	5.2	119	
do.	Aug. 11	1.03	1,065	1,065	.44	
do.	Mar. 17	537	1,065	1,065	.50	
do.	Mar. 17	32,000	a	341	94	
do.	Mar. 17	6,820	b	110	52	
do.	Oct. 23	1.00	45.5	264	17	
do.	Dec. 15	3.28	1,010	264	3.83	
do.	Feb. 15	3.76	1,440	264	5.45	
do.	Apr. 27	1.68	1,195	264	74	
do.	Apr. 28	1.70	209	264	79	
do.	June 5	1.07	45.2	264	17	
do.	Aug. 14	.92	25.8	264	10	
Casselman River.						
Indian Creek...	Mar. 17	1.00	1.00	1.00	1.00	
Chartiers Creek.	Oct. 23	3.28	1.68	1.68	1.68	
do.	Dec. 15	3.28	1.010	1.010	1.010	
do.	Feb. 15	3.76	1,440	1,440	1,440	
do.	Apr. 27	1.68	1,195	1,195	1,195	
do.	Apr. 28	1.70	209	209	209	
do.	June 5	1.07	45.2	45.2	45.2	
do.	Aug. 14	.92	25.8	25.8	25.8	

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Summary of run-off in second-feet per square mile, run-off depth in inches, precipitation, and per cent run-off to precipitation, for the year ending Sept. 30, 1936

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Run-off in second-feet per square mile

Drainage area	Station	Run-off in second-feet per square mile												Per cent				
		square miles	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year	Depth in inches	Depth in inches	Run-off to precipitation
Delaware River at Port Jervis, N. Y....	3,076	0.442	1.95	1.66	0.867	0.886	1.18	1.79	2.01	2.09	0.264	0.348	0.346	0.346	2.01	2.39	43.83	62.4
Delaware River at Belvidere, N. J....	4,542	0.452	3.44	3.17	2.11	2.14	1.07	0.997	0.946	1.21	0.273	0.407	0.367	0.328	2.10	2.43	45.18	62.9
Delaware River at Riegelsville, N. J....	6,344	0.452	3.17	3.21	2.14	2.14	1.07	0.945	0.946	1.21	0.273	0.413	0.367	0.328	2.15	2.25	46.01	62.2
Delaware River at Trenton, N. J....	6,796	0.437	3.65	3.65	2.20	2.20	1.65	1.07	1.27	1.27	0.265	0.265	0.265	0.265	2.26	2.25	46.22	63.3
Delaware River at West Hawley....	206	0.719	2.61	1.57	1.26	1.57	1.57	1.02	1.19	1.19	0.573	0.573	0.573	0.573	2.26	2.34	47.34	52.1
Lackawaxen River at West Hawley....	228	0.317	2.61	1.57	1.26	1.57	1.57	1.02	1.13	1.13	0.645	0.645	0.645	0.645	2.26	2.34	47.34	52.1
Wallenpaupack Creek at Wiltonville....	117	1.596	3.54	2.71	2.78	1.32	8.75	1.32	1.16	1.16	4.24	1.02	0.691	0.425	2.81	2.48	33.78	47.74
Bushkill Creek at Shoemakers....	64.4	1.05	3.42	2.28	3.09	1.15	1.15	1.15	1.15	1.15	4.24	1.02	0.691	0.425	2.18	2.15	33.78	47.74
McMobaels Creek at Stroudsburg....	322	0.609	3.00	2.39	2.20	1.13	1.13	1.13	1.13	1.13	2.81	1.21	0.913	0.429	2.18	2.15	33.78	47.74
Lehigh River at Tannery....	1,280	0.610	2.66	2.14	2.59	1.31	9.31	3.84	1.20	1.20	0.901	0.901	0.556	0.556	2.18	2.15	33.78	47.74
Lehigh River at Bethlehem....	97.4	1.26	3.89	1.15	3.82	1.15	3.82	1.15	1.15	1.15	2.56	1.65	1.98	1.02	0.04	0.04	27.89	70.8
Tobickon Creek near Pipersville....	210	1.408	1.96	1.02	3.67	1.66	1.66	1.66	1.66	1.66	5.54	1.95	0.657	0.279	1.98	1.98	44.83	55.17
Neshaminy Creek near Langhorne....	1,147	1.429	1.56	1.50	2.97	1.95	1.95	1.95	1.95	1.95	3.40	1.24	0.929	0.520	1.94	1.94	43.83	56.17
Sohuykill River at Pottstown....	1,893	0.479	2.01	1.49	3.33	1.50	1.50	1.50	1.50	1.50	9.80	3.40	0.783	0.395	1.83	1.83	43.83	56.17
Sohuykill River at Philadelphia....	42.9	0.667	2.00	1.93	2.17	1.43	1.43	1.43	1.43	1.43	3.43	1.15	0.429	0.279	1.98	1.98	44.83	55.17
Little Sohuykill River at Tamaqua....	279	0.516	3.09	1.73	4.36	1.82	1.82	1.82	1.82	1.82	7.86	2.40	1.423	0.961	2.08	2.08	44.83	55.17
Perkiomen Creek at Grater's Ford....	33.3	0.964	1.93	1.40	3.33	2.75	2.75	2.75	2.75	2.75	4.32	2.83	1.37	0.958	1.79	1.79	44.83	55.17
Crum Creek at Woodlyn....	31.9	1.05	2.03	1.35	2.03	1.35	2.03	1.35	1.35	1.35	2.90	4.58	1.37	0.856	1.34	1.34	44.83	55.17
Ridley Creek at Moylan....	61.1	1.843	1.82	1.06	3.45	1.82	1.82	1.82	1.82	1.82	3.03	2.45	1.21	0.825	1.21	1.21	44.83	55.17
Chester Creek near Chester....	87.8	0.850	2.12	1.30	4.26	3.33	3.33	3.33	3.33	3.33	3.76	2.07	1.16	0.796	2.22	2.22	44.83	55.17
Brandywine Creek at Chadde's Ford....	287	0.657	1.96	1.32	3.62	2.56	2.56	2.56	2.56	2.56	4.54	2.90	1.46	0.986	1.62	1.62	44.83	55.17

Sept. 30, 1936

Susquehanna River Basin

Station	Drainage area square miles	Run-off in second-feet per square mile												Run-off in inches	Per cent run-off to precipita- tion			
		Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year					
No. Br. Susquehanna River at Towanda	7,797	0.244	2.30	1.40	0.881	0.528	7.60	2.70	0.932	0.296	0.110	0.208	1.39	1.47	19.98	37.82	52.8	
No. Br. Susquehanna River at Wilkes-Barre	9,960	.220	2.26	1.33	.695	.525	8.09	2.63	.854	.327	.145	.244	.161	1.45	20.01	36.34	52.2	
No. Br. Susquehanna River at Danville	11,220	.197	2.27	1.56	1.03	.536	8.19	2.70	.762	.162	.210	.155	.158	1.52	20.75	36.64	53.7	
Susquehanna River at Harrisburg	24,100	1.86	1.54	1.39	1.05	.702	8.97	2.82	.794	.442	.217	.235	.198	1.56	21.17	40.78	51.9	
Susquehanna River at Middletown	25,990	1.86	1.45	1.34	1.08	.690	8.81	2.81	.783	.461	.241	.235	.190	1.53	20.83	40.98	50.5	
Towanda Creek near Monroeton	214	105	1.40	1.32	1.738	.603	9.43	2.38	.720	.235	.049	.108	.023	1.35	18.34	39.88	46.0	
Tunkhannock Creek at Diazon	45.8	.415	3.99	1.90	1.85	.590	7.20	2.38	.405	.205	.086	.188	.008	1.55	21.16	46.12	45.9	
Tunkhannock Creek near Wapwallopen	352	.006	1.90	1.85	1.69	1.03	7.14	2.21	.627	.166	.074	.166	.008	1.55	20.36	39.06	52.1	
West Br. Susquehanna River at Bower	315	.167	8.92	2.08	1.48	1.48	10.7	2.41	.438	.289	.160	.933	.330	1.62	24.82	50.50	49.1	
West Br. Susquehanna River at Renovo	2,975	.144	.793	1.53	1.24	.646	11.5	2.80	.742	.484	.177	.320	.185	1.73	23.50	42.87	54.8	
West Br. Susquehanna River at Williamsport	5,682	.169	.960	1.50	1.83	.936	4.60	11.1	.284	.763	.450	.199	.265	.204	1.67	22.69	42.37	53.6
Clearfield Creek at Dunceling	371	.112	.660	1.43	1.83	1.21	11.8	2.43	.429	.485	.185	.423	.223	1.78	24.22	46.98	51.6	
Driftwood Branch Sinnemahoning Creek at Sterling Run	281	.206	1.92	1.96	.694	.601	13.8	2.60	7.12	1.91	.072	.201	.047	1.83	24.83	39.60	62.7	
North Bald Eagle Creek at Beech Creek Station	252	.565	1.20	.692	.887	.606	8.87	2.58	.526	.351	.169	.283	1.43	19.42	41.50	46.8		
Pine Creek at Cedar Run	604	.202	.922	.975	.887	.566	10.5	2.98	.813	.328	.124	.192	1.52	20.52	40.68	52.6		
Lycoming Creek near Trout Run	173	.247	1.86	1.48	.792	.446	9.39	2.32	.02	.351	.134	.194	.068	1.54	20.92	44.94	46.6	
Loyalsock Creek at Loyalsock	443	.193	2.35	1.92	1.85	1.00	10.1	2.66	.993	.472	.202	.162	.089	1.59	20.06	43.02	46.6	
Penn Creek at Penns Creek	301	.271	1.01	1.36	.890	.724	10.3	2.82	.673	.455	.203	.243	.140	1.59	21.76	42.19	51.6	
Mahanatago Creek East near Dallas	162	.170	.889	1.17	1.91	1.59	7.48	2.36	.501	.623	.244	.205	.118	1.44	19.44	41.52	47.3	
Franktown Branch Juncta River at Franktown	291	.227	.502	.952	1.01	1.32	12.2	3.14	.584	.440	.312	.361	.293	1.79	24.36	47.07	51.8	
Juniata River at Export	46.4	.195	.639	.992	.936	1.25	10.3	2.48	1.05	.716	.163	.196	.104	1.67	22.82	43.35	50.3	
Shaver Creek near Petersburg	128	.193	.429	1.04	.953	.922	8.15	2.91	1.20	1.24	.249	.246	.136	1.46	20.11	44.50	51.2	
Standing Stone Creek near Huntingdon	756	.183	.462	.915	.939	1.60	10.5	2.44	.493	.434	.266	.422	.258	1.58	21.86	44.15	48.8	
Dunning Creek at Yount	191	.165	.644	1.23	1.12	1.25	10.5	2.54	.526	.339	.167	.177	.120	1.60	21.80	43.35	48.0	
Brush Creek at Gapsville	36.8	.117	.448	.994	.896	1.30	11.7	2.59	.459	.290	.137	.248	.036	1.59	21.67	41.63	52.1	
Great Trough Creek near Orbeonia	84.6	.174	.170	.556	1.15	1.16	1.89	10.2	2.62	.479	.250	.186	.187	1.62	21.86	42.19	51.8	
Fucaerora Creek near Port Royal	214	.272	1.29	1.33	1.55	1.23	8.48	2.99	.330	.255	.126	.169	.106	1.60	21.70	42.54	51.0	
Cooloanous Creek near Millerton	57.2	.275	1.78	1.43	1.54	2.16	9.36	3.30	.620	.383	.210	.366	.262	1.53	20.78	43.02	48.3	
Sherman Creek at Shermandale	200	.660	1.90	1.76	1.54	1.61	6.83	7.64	.545	.447	.271	.300	.163	1.71	23.26	45.24	51.4	
Conodoguinet Creek near Rogestown	470	.385	1.23	1.23	1.34	2.30	8.92	3.32	.535	.529	.271	.300	.163	1.71	23.26	45.24	51.4	
Swatara Creek at Harper Tavern	333	.158	1.05	1.26	1.34	2.30	8.92	3.32										

Summary of run-off in second-feet per square mile, run-off depth in inches, precipitation, and per cent run-off to precipitation, for the year ending Sept. 30, 1936

Susquehanna River Basin

Station	Drainage area square miles	Run-off in second-feet per square mile												Run-off in inches	Per cent run-off to precipita- tion		
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.				
West Conewago Creek near Manchester	510	0.126	0.515	0.843	1.85	1.27	6.76	2.29	0.373	0.751	0.669	0.365	0.112	1.33	16.14	42.45	42.7
Conewago Creek at Spring Grove	74.3	.351	.339	.520	1.87	1.88	4.85	2.40	.665	.366	.241	.174	1.15	15.73	42.29	42.7	
South Branch of Codorus Creek near York	117	.311	.324	1.72	2.00	1.76	4.38	2.34	.855	.589	.451	.354	1.23	16.72	42.75	42.3	
Genesee Creek at Lancaster	322	.244	1.16	1.03	2.61	1.35	2.81	2.32	3.89	2.32	1.36	.495	.365	1.47	20.09	43.79	46.1
Muddy Creek at Castle Pin...	133	.648	1.12	.970	2.59											36.79	51.8

Summary of run-off in second-feet per square mile, run-off depth in inches, precipitation, and per cent run-off to precipitation, for the year ending Sept. 30, 1936

Ohio River Basin

Station	Run-off in second-feet per square mile												Run-off in inches	Depth in inches	Per cent precipita tion	
	Square miles	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year		
Allegheny River at Larabee.....	541	0.366	1.16	1.46	0.799	0.680	7.74	3.50	0.605	0.346	0.412	0.161	0.075	1.46	19.91	28.36
Allegheny River at Franklin.....	5,952	.273	.639	1.09	1.35	8.33	3.61	1.17	.338	.174	.148	.110	1.58	21.49	35.87	
Allegheny River at Parkers Landing.....	7,671	.624	1.51	1.12	1.34	8.22	3.53	1.14	.344	.188	.124	1.55	21.18	76.49	59.9	
Ohio River at Seville.....	19,500	.285	7.39	1.63	2.07	2.33	7.58	2.94	.746	.321	.425	.368	1.64	22.36	41.11	
Broenkaw Creek at Youngsville.....	1,704	.339	.546	2.10	1.07	1.65	8.71	3.75	1.49	.490	.195	.123	.104	1.72	23.40	41.38
Tionesta Creek at Nobrels.....	1,451	.222	.744	1.55	1.18	1.63	9.23	2.90	1.22	.356	.218	.170	1.11	1.63	22.26	38.59
Oil Creek at Roseville.....	200	.251	.510	1.58	1.05	1.83	8.58	3.30	1.31	.318	.225	.187	.134	1.61	21.92	38.57
French Creek at Oarter's Corners.....	208	.435	.731	2.13	1.74	2.73	9.38	3.26	.612	.199	.093	.060	.055	1.60	24.58	39.47
French Creek at Seagertown.....	629	.291	.472	1.86	1.71	2.12	8.22	3.29	.919	.216	.126	.076	.076	1.62	22.27	36.39
French Creek at Utica.....	1,028	.230	.351	1.57	1.51	1.57	7.01	2.97	.895	.216	.146	.117	.104	1.39	18.98	36.57
Cussewago Creek near Meadville.....	90.2	.082	.198	1.70	1.01	1.32	6.10	2.57	.562	.054	.055	.046	.075	1.15	15.65	36.57
Sugar Creek at Sugarcreek.....	166	.140	.319	1.24	1.13	2.01	6.79	2.92	1.39	.377	.273	.256	.183	1.42	19.34	36.44
Clarion River near Piney.....	951	.216	.814	1.84	1.27	1.27	9.10	2.76	.938	.376	.169	.217	.102	1.59	21.75	53.46
Redbank Creek at St. Charles.....	526	.258	.888	2.37	1.57	1.77	9.50	2.14	.491	.206	.131	.157	.112	1.64	22.23	40.46
Mahoning Creek near Dayton.....	321	.211	1.19	2.21	2.01	8.07	2.46	.198	.265	.094	.284	.191	.145	1.45	21.75	41.36
Crooked Creek near Ford City.....	250	.171	1.22	1.90	3.06	2.23	6.28	1.48	.198	.262	.094	.284	.191	1.45	19.74	43.22
Stony Creek at Johnstown.....	467	.349	.771	1.46	1.78	2.65	10.8	3.02	.574	.508	.299	.156	.689	1.98	2.05	27.96
Kleminitas River at Avonmore.....	1,723	.253	.869	2.07	2.40	3.00	8.85	2.72	.479	.449	.262	1.36	.731	2.17	26.90	47.82
Blacklick Creek at Blacklick.....	390	.192	.951	2.29	2.73	2.83	9.59	2.72	.479	.449	.337	.167	.691	1.79	24.41	45.96
Loyalahama Creek at New Alexandria.....	265	.246	.751	1.82	2.36	2.36	8.58	2.43	.464	.449	.324	.167	.691	1.79	24.41	45.96
Monongahela River at Charleroi.....	5,213	.255	1.01	1.91	3.36	3.79	6.66	2.91	.599	.194	.824	.085	.091	1.62	24.80	45.79
South Fork of Tenmile Creek at Jefferson.....	180	.067	.706	1.63	2.04	4.37	5.04	2.31	.127	.025	.162	.165	.026	1.38	18.79	37.80
Toughiookeny River at Connellsville.....	1,326	.336	.656	1.85	2.77	3.55	8.57	3.17	.796	.450	.619	1.05	.489	2.03	27.58	46.46
Toughiookeny River at Sutersville.....	1,715	.324	.644	1.75	2.62	3.56	8.60	2.80	.655	.386	.478	.892	.421	1.93	26.25	45.50
Casselman River at Marlinton.....	382	.197	.589	1.58	1.31	1.93	7.00	2.91	.71	.484	.243	.285	.227	1.80	24.56	48.50
Big Piney Run near Salisbury.....	21.5	.174	.527	1.31	1.93	2.00	2.9	2.51	.412	.111	.133	.135	.075	2.12	26.17	45.14
Laurel Hill Creek at Ursina.....	121	.202	.654	2.05	2.81	3.78	7.78	3.45	.567	.501	.283	.212	.660	2.40	22.59	46.00
Turtle Creek at Trafford.....	54.5	.105	.681	1.63	2.96	2.96	7.79	6.46	1.70	.246	.099	.063	.252	.862	12.47	37.72
Beaver River at Wampum.....	2,295	.165	.257	1.04	1.21	1.42	4.03	1.52	.485	.185	.196	.237	.235	.915	12.47	34.44
Shenango River at Pyrmontung Dam.....	167	-.015	.152	1.26	1.20	1.79	4.66	1.60	.457	-.389	-.072	.054	-.261	.862	11.79	35.87
Sugar Run at Pyrmontung Dam.....	608	.050	.185	1.52	1.26	1.39	4.79	1.79	.546	-.018	.046	.195	.046	.993	13.32	36.44
Little Shenango River at Greenville.....	104	.016	.108	.969	1.01	1.85	4.37	1.52	.224	.048	.238	.395	.048	.869	11.82	32.51
Pymontung Creek near Orangeville.....	169	.064	.110	1.25	1.58	1.84	4.79	1.69	.525	.053	.103	.302	.129	.112	15.32	46.27
Connoquenessing Creek near Hazen.....	356	.187	.531	2.31	2.26	2.04	6.40	1.96	.466	.193	.093	.090	.111	1.38	18.66	39.1
Slippery Rock Creek at Wurtensburg.....	406	.242	.591	1.98	1.99	1.96	5.25	1.62	.926	.195	.163	.119	.127	17.30	31.27	55.3

Summary of run-off in second-feet per square mile, run-off depth in inches, precipitation, and per cent run-off to precipitation, for the year ending Sept. 30, 1936

Potomac River Basin

Station	Run-off in second-feet per square mile												Run-off in inches	Depth in inches	Per cent precipita tion	
	Square miles	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year		
Elkite Creek near Bedford Valley.....	30.2	0.167	0.387	0.606	0.997	2.26	9.64	2.25	0.530	0.283	0.197	0.138	0.090	1.46	19.95	46.27
Licking Creek near Sylvan.....	15.8	0.196	0.463	1.22	1.72	9.54	2.70	0.405	0.174	0.104	0.096	0.048	1.46	19.79	41.74	47.4

ELEVATIONS OF MAJOR FLOODS

ELEVATIONS OF MAJOR FLOODS
DELAWARE BASIN

Delaware River

Miles from initial point	0.0	14.3	17.4	40.0	48.9	62.8	79.9	111.8	120.6
Year	Month	Trenton, N.J. (Calhoun St. gage)	Lambertville, N.J.	Stockton, N.J.	Riegelsville, N.J.	Bolvidere, N.J.	Shawnee, Pa.	Milford, Pa.	Port Jervis, N.Y.
1786	October	62.9							
1841	January	66.9							
1846	March	64.4							
1862	June		77.8						
1869	October		75.8						
1895	April			189.2					
1901	December	23.1	65.0						
1902	March	23.6	66.7	76.8					
1903	October	27.3	70.0	81.2	161.2				
1904	February					255.8			
1907	December		61.7				328.2		
1913	March	21.1						405.8	
1914	March	19.8							438.9
1924	April	19.6	61.0						441.1 *
1924	October	20.3	62.5	72.8	149.5				
1933	August	20.4	61.9	72.8	150.3				
1934	March	22.0 *				245.2			
1935	July	19.5	59.9	71.9	148.5				
1936	January	23.9 *						423.7	
1936	March 12-13	23.1	65.2	80.9	155.1				430.2
1936	March 18-19	24.4	67.0		157.7	188.0	324.2	398.4	433.2

ELEVATIONS OF MAJOR FLOODS
DELAWARE BASIN

Lehigh River

Miles from initial point	0.0	5.8	31.2	34.7	55.7				
Year	Month	Bethlehem (New Street)	Allentown (Hamilton Street)	Lehighton	Mauch Chunk	Tannery			
1786	October	228.9							
1839	January	226.9							
1841	January	233.9							
1862	June	234.2							
1869	October	233.9							
1894	May	227.9							
1901	December	228.4							
1902	February	236.8	256.5						
1924	October	227.1	248.3	527.1	527.9				
1926	November	227.4	250.0 *		527.1	1054.4			
1933	August	231.7	250.0 *		527.9	1055.1			
1935	July	231.6	229.9	456.9	524.4	1055.3			
1936	March 12	231.6	248.2 #	457.0		1055.0			
1936	March 18	228.3							

* Affected by ice.

** Affected by a dam failure.

About 4,000 ft. downstream from Hamilton Street.

ELEVATIONS OF MAJOR FLOODS
DELAWARE BASIN

Schuylkill River

Miles from initial point	0.0	7.1	11.6	14.8	26.8	44.0	65.3	87.5	104.1	
Year	Month	Philadelphia (Fairmount Dam)	Fiat Rock Dam	Conshohocken	Norristown	Phoenixville	Pottstown	Reading	Hamburg	Schuylkill Haven
1757	July									
1786	October									
1841	January									
1850	July									
1850	September									
1862	June									
1869	October									
1894	May									
1902	Feb.-Mar.									
1904	March									
1920	March									
1924	Sept.-Oct.									
1933	August									
1935	July									
1936	March 12	19.9	50.6	61.7	68.4	90.4	137.0	203.5		
		19.3	48.0		66.1	96.9	132.7	205.8		
		16.8				93.8	132.9	204.3		
						93.3		204.5		
								210.1		
								210.0		
								203.5		
								206.7		
								205.0		
								206.0		
								204.4		
								204.0		
								353.0		
									503.9	

ELEVATIONS OF MAJOR FLOODS
SUSQUEHANNA BASIN

Susquehanna River

Miles from initial point	0.0	15.8	19.4	25.3	31.2	40.4	50.1	76.3	77.3	
Year	Month	Marietta	Middletown	Hightspire	Harrisburg	Rockville	Clarks Ferry	Montgomery Ferry	Shamokin Dam	Sunbury
1786	October				312.0					
1846	March				312.0					
1865	March				314.6					
1868	March				310.0					
1886	February				310.8 *					
1889	June				316.8					
1894	May				315.4					
1901	December				311.2					
1902	March				313.7 *					
1904	March				310.2					
1920	March				311.8					
1936	March 13	254.7	299.9	303.9	324.1	322.4	355.7	375.3	439.7	441.5
	March 19	260.7	299.2		320.7			375.7	438.0	
								438.1	440.0	

ELEVATIONS OF MAJOR FLOODS
SUSQUEHANNA BASIN

North Branch of Susquehanna River

Miles from initial point		0.0	19.6	35.0	51.8	70.9	93.5	113.9	133.9	192.8
Year	Month	Danville	Crorey	Shickshinny	Wilkes-Barre	West Falls	Mehoopy	Wyalusing	Towanda	Binghamton, N.Y.
1784	March				541.9 *					
1786	October				540.9					
1807	April				541.9					
1833	May				539.9					
1865	March	459.1	486.9		545.0					
1891	January				538.7					
1893	March				540.6 *					
1895	March				538.9 *					
1899	January				536.9 *					
1901	December	453.9			538.9					
1902	March	457.9 *	485.1		543.3					
1904	February	455.6 *			537.6 *					
1904	March	461.8 *	488.5		542.5 *					
1910	March	452.1			538.0					
1913	March	454.2			540.4					
1914	March	453.8			540.2					
1916	April	452.9			558.4					
1920	March	452.0			537.9					
1925	February	451.4			537.0					
1929	April	451.4			558.4					
1935	July	451.1			537.5					
1936	March 13	454.3			540.7					
1936	March 18-20	459.1 *	486.1	520.7	545.0	580.6	632.3	671.7	718.9	844.3

ELEVATIONS OF MAJOR FLOODS
SUSQUEHANNA BASIN

West Branch of Susquehanna River

Miles from initial point		0.0	8.5.	32.0	48.3	62.7	90.3	124.9	167.5	197.1
Year	Month	Lewisburg	Watsontown	Williamsport	Jersey Shore	Lock Haven	Reno	Karthaus	Clearfield	Mahanoy
1846	March			518.6						
1847	October			514.6						
1851	July			516.6						
1861	September			518.6						
1865	March	467.3		520.6						
1886	January			517.6						
1889	May - June	457.1	473.6	527.0	550.5	564.8	661.3	850.9	1109.0	1266.3
1891	February	456.3	472.1	516.6	547.7					
1894	May			524.6						
1898	March			515.6						
1901	December			515.2						
1902	March			516.2 *						
1904	March			515.6						
1909	May			515.6						
1913	March			515.0						
1916	March			515.6						
1916	June			515.6						
1918	February			516.0						
1919	May			515.4						
1920	March			515.0						
1923	March			516.2						
1936	March 11-12	459.3	475.4	528.1	551.1	567.3	663.4	853.4	1110.8	1268.9
1936	March 18-19									

* Affected by ice.

† Affected by backwater from West Branch.

ELEVATIONS OF MAJOR FLOODS
SUSQUEHANNA BASIN

Juniata River

Miles from initial point		0.0	34.6	73.0						
Year	Month	Newport	Lewistown	Mapleton	Frankstown Br. - Huntingdon(4th St.)	Frankstown Br. - Alexandria	Frankstown Br. - Williamsburg	Little Juniata R. Tyrone	Raystown Br. - Sexton	Reystown Br. - Everett
1810	November	391.2			613.7					
1846	March	383.2								
1847	October	391.7								
1889	June	399.1								
1894	May	394.2								
1901	December	385.2								
1902	March	388.5								
1907	March	386.7								
1908	March	384.5								
1916	June	383.2								
1920	March	384.1 *								
1936	February	386.6 *								
1936	March 12	383.6								
1936	March 18-19	397.4	486.2	596.0	707.2	843.1	850.4	896.5	805.6	819.3

ELEVATIONS OF MAJOR FLOODS
OHIO BASIN

Allegheny River

Miles from initial point		0.0	16.40	55.10	96.20					
Year	Month	Freesport	Kittanning	Parkers Landing	Franklin	Warren	Red House, N.Y.	Larabee		
1806	April		794.4							
1832	February	767.0								
1865	March	794.0								
1873	December	791.4								
1881	June	764.4								
1883	February	765.5								
1884	February	765.0								
1886	February	755.7	791.0							
1891	February	767.7	791.0							
1902	March	765.0	789.6							
1905	March	767.0	793.4							
1913	January	763.4	789.8							

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ELEVATIONS OF MAJOR FLOODS
OHIO BASIN

Kiskiminetas River and its important tributaries

Miles from initial point		0.0	11.63	16.05	38.00	58.90	70.10			
Year	Month	Kiskiminetas R. Vandergrift	Kiskiminetas R. Avonmore	Kiskiminetas R. Saltsburg	Coneaugh R. Blairsville	Coneaugh R. Seward	Stony Cr. Johnstown ^{a/}			
1884	February		829.7							
1888	August		837.4							
1889	June		835.4							
1891	February		836.0							
1902	March		832.0							
1906	June		824.7	836.4						
1907	March		839.4	847.4						
1908	February		828.1	837.4						
1908	March		836.4	844.4						
1910	February		829.3							
1912	March		833.6	842.4						
1912	September		827.9	835.4						
1913	January		827.8	838.6						
1917	January		829.6	838.6						
1917	March		824.3	835.2						
1918	February		827.6							
1921	November	791.6	830.3	841.1						
1924	March	790.7	829.6							
1924	May		827.5	837.4						
1927	October	792.1	830.7							
1928	May		825.9							
1930	February	789.6	828.9							
1933	March		828.6							
1936	March 18	808.2	852.8	859.9	948.3	1098.8	1184.3			

ELEVATIONS OF MAJOR FLOODS
OHIO BASIN

Youghiogheny River

Miles from initial point		0.0	4.22	29.47	47.70	57.87				
Year	Month	Sutersville	West Newton	Connellsville	Chipyople	Confluence				
1860	April									
1888	August									
1891	February		759.3	876.6	877.9	1325.9				
1896	July		756.9	875.1	874.8	1321.2				
1897	February		762.7	876.8	877.4					
1902	February		762.7	875.9	877.4					
1904	March		757.7	873.8	878.5					
1907	March		768.9	873.8	878.5					
1908	February		758.2	874.5	878.5					
1912	March		769.6 *	877.4	878.5					
1913	January		757.4	873.6	878.5					
1916	March	752.1	758.2	875.1	875.1	1327.5				
1917	January	753.6	760.0	875.3 *	874.1	1321.2				
1918	February	751.9	756.9 *	874.1	874.1	1322.5				
1924	March	761.4	766.3	879.5	1211.9	1329.3				
1928	May	751.4	757.7	875.8	1319.9					
1933	March	754.2	759.1	875.0	1320.9					
1936	March 12	743.7	749.1	868.6	1204.6	1212.3	1328.6			
1936	March 18	763.8	768.7	880.4	1212.3	1328.6				

* Affected by ice.

^{a/} Elevations for 1906-1908 are at Franklin Street; for other years they are for Poplar Street, about 3500 feet farther upstream.

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OHIO RIVER FLOOD HEIGHTS AT PITTSBURGH

Year	Day of month	Stage	Year	Day of month	Stage
1762	January 9	39.2	1899	March 6	25.2
1763	March 9	41.1	1900	November 27	30.9
1806	April 10	37.1	1901	April 7	25.3
1810	November 9	35.2	1901	April 21	30.7
1813	January --	32.2	1901	December 16	29.0
1816	February --	36.2	1902	March 1	35.6
1832	February 10	38.2	1903	February 5	27.2
1840	February 1	30.0	1903	March 1	32.1
1846	March 15	28.2	1904	January 23	33.2
1847	February 2	30.1	1904	March 4	30.1
1847	December 12	27.2	1904	March 8	26.4
1848	December 22	26.2	1905	March 22	32.2
1851	September 20	34.1	1905	December 4	26.7
1852	April 6	28.2	1907	January 20	26.5
1852	April 19	35.1	1907	March 15	38.7
1858	May 27	29.2	1907	March 20	25.6
1859	April 28	25.2	1908	February 16	33.9
1860	April 12	32.9	1908	March 20	30.5
1860	November 4	25.2	1909	February 25	25.5
1861	September 29	34.2	1909	May 1	25.4
1862	January 21	33.2	1910	January 19	26.0
1862	April 22	28.6	1910	March 1	25.2
1865	March 4	27.7	1911	January 15	27.0
1865	March 18	34.6	1911	January 31	28.4
1867	February 15	25.2	1912	March 22	31.3
1867	March 13	26.7	1913	January 9	34.5
1868	March 18	25.2	1913	January 12	29.5
1873	December 14	28.9	1913	March 28	33.6
1874	January 8	25.4	1913	November 17	25.4
1876	September 19	28.2	1915	February 3	31.6
1877	January 17	27.8	1915	December 19	25.8
1878	December 11	27.7	1917	January 23	28.4
1881	February 11	26.4	1917	March 13	26.3
1881	June 10	30.3	1918	February 21	30.3
1883	February 5	28.0	1918	March 15	29.1
1883	February 8	31.2	1919	January 3	26.0
1884	February 6	36.5	1920	March 13	28.3
1885	January 17	26.2	1921	November 29	28.6
1886	April 7	26.0	1921	January 4	30.6
1887	February 12	25.2	1924	March 30	32.4
1887	February 27	25.2	1924	May 13	29.6
1888	July 11	25.2	1927	January 23	29.7
1888	August 22	29.2	1927	December 14	30.4
1889	June 1	27.2	1929	February 27	25.3
1890	March 23	27.5	1933	March 16	29.6
1890	May 24	25.2	1934	March 6	25.8
1891	January 3	26.4	1935	March 13	26.3
1891	February 18	34.5	1936		

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